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Editors

INCORPORATING WEB-ASSISTED INSTRUCTION INTO THE BUSINESS COMMUNICATION CURRICULUM

Lucia S. Sigmar, Sam Houston State University
Tab W. Cooper, Sam Houston State University

ABSTRACT

Our survey of approximately 175 students at an AACSB-accredited university explores the impact of Web-assisted writing instruction in the business communication classroom. Our findings indicate that this instruction improves writing quality, allows more time for writing practice and the development of business messages, and significantly improves student satisfaction and confidence in writing and with the writing process. The skill-specific, individualized nature of Web-based writing instruction can help students identify and overcome their technical weaknesses so that they can become competent in the social conventions of language usage and use language in appropriate business contexts. These findings were strongly influenced by the students' ability to navigate the website and the online writing software.

INTRODUCTION

We often judge the intelligence of people by observing how they use language. Aside from content knowledge, it is often the first basis on which personal and professional competence is determined. Our students' success in both an academic and professional context depends on their understanding of, conformity to, and competence in the social conventions of language usage.

And yet, few of us would agree that teaching grammar and fundamental writing skills are a part of the business communication curriculum. We expect our students to have mastered the basics of writing by the time they arrive in our classrooms. The reality, however, is that our students rarely come to us prepared to begin learning the principles of business communication (content knowledge). We spend valuable instructional time and energy in correcting grammar and usage in an effort to reach the stage where we can teach them to analyze communication scenarios and strategically plan and execute a business message.

How then can we then bring our students up to speed quickly in the area of grammar and usage so that we can concentrate our efforts in teaching the principles behind effective business communication? This study investigates the use of online writing software as a partial means of

assessing student progress in writing skill development, and further, its use as a supplemental tool in the business communication classroom to review and to develop grammar, punctuation, spelling, word choice, sentence structure, and paragraph development skills.

Following a semester of Web-assisted writing instruction during the spring of 2008, we surveyed 155 students at an AACSB-accredited university to determine the impact of the instruction in 1) improving the students' perception of the quality of their business writing, 2) allowing more classroom time for writing practice and the development of business messages, and 3) improving student satisfaction with and confidence in the writing process.

REVIEW OF LITERATURE

Web-based or online instruction has been a popular topic of pedagogical inquiry over recent years, and its merits have been debated by scholars who, on the one hand, praise its ability to engage learners without the social censures of age, gender, race, or underdeveloped interpersonal skills like shyness (Bowman, 2001) and to reach individuals who might not have access to learning opportunities in higher education otherwise (McEwen, 2001). Other critics, however, recognize that distance learning can be socially isolating for students (Dyrud, 2000). They maintain that distance learners are perhaps more likely to disengage or drop out more easily than traditional students (Worley, 2000), or that such students lack sufficient motivation to complete online courses (Dyrud, 2000; LaRose and Whitten, 2000). Distance learning can also fail to address apprehension about communicating (Wardrope, 2001) and the oral and non-verbal communication skills that are essential to social and business success.

In light of these limitations, however, many educators recommend Web-based instruction as a supplemental tool, rather than a replacement for traditional teaching methods. McEwen calls this blending of online and traditional instruction, *Web-assisted instruction*, and maintains that it "offers a richer learning environment than either one offered alone" (McEwen, p. 103).

The topic of Web-assisted instruction assumes various forms. Sauer and Walker, for example, compare improvement in writing skills between students enrolled in a traditional classroom course in business communication and students enrolled in a hybrid course using Blackboard course management software to promote communication and foster active learning. Pre- and post-assessment surveys indicate that students enrolled in the online hybrid business communication course show a higher level of active learning than the students in the traditional course. Further, the hybrid students' improvement in writing was just as significant as the traditional classroom students' writing improvement as long as the online instruction addressed their particular needs (2004). Other inquiries (Krause, 2006) are aimed primarily at technological innovation or instructional design (Cook, 2000). Still other educators are concerned with the aspects of interactivity (Mabrito, Dyrud, & Worley, 2001) in online classrooms or with the development of technology-driven processes and Web-based delivery systems for business writing (Karr, 2001).

Our inquiry, however, has a more pragmatic focus. We incorporate Web-assisted instruction in the business communication classroom using online writing software as a partial means of quickly improving basic writing skills. Further, we investigate its impact on traditional pedagogical methods, student perception of the quality of their business writing, and their satisfaction with and confidence in the writing process after using the writing software.

DESCRIPTION OF THE ONLINE WRITING SOFTWARE

This study piloted an online writing software package called *Writer's Workout* sold by the publisher of the course textbook, McGraw-Hill. This interactive teaching/learning resource focuses on the skills and knowledge that are essential in speaking and writing English with clarity and coherence. The software measures skills competency in nine primary areas: grammar, punctuation, spelling, word choice, sentence structure, paragraph development, presenting, people skills, and persuasion. Students in this study were not required to complete the latter three and focused only on the skills sets directly related to the writing process.

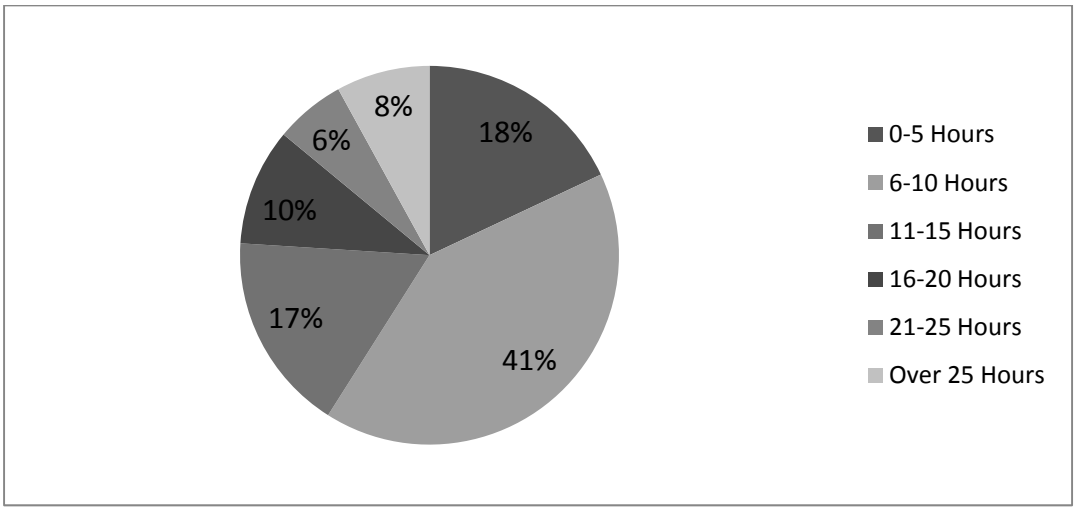
The software is designed to assess individual student competencies in each of these areas, and further identifies deficiencies in which the student needs additional instruction. Mini-lessons in these problem areas are then sent to a customized Workout Log that the student completes independently.

Students purchased the software for a nominal fee ($7-8) as a supplemental tool at the University Bookstore. The students were asked to complete the online writing software assignment prior to mid-term, after which the majority of writing assignments were assigned. After completion of the online writing software and other writing assignments, students took a survey which measured the demographic composition of the group, their previous writing experience, their perception of the quality of their business writing, and their satisfaction with and confidence in the writing process after using the writing software.

THE ASSIGNMENT

Students were first asked to complete an overall assessment which then determined what specific mini-lessons each student needed to address in his/her Workout Log. Credit for these mini-lessons was given only if they performed at 100% on each lesson. Students were allowed to re-take these mini-lessons as many times as necessary to complete this assignment before mid-term. Most of the students were able to complete the assignment in less than ten hours as Figure 1 illustrates.

Figure 1:. Number of Hours to Complete Online Writing Skills Assignment



DESCRIPTION OF THE SAMPLE POPULATION

This study surveyed seven sections of a required, writing-enhanced course in business communication with a total enrollment of 175 students at an AACSB-accredited university during the spring semester of 2008. Over ninety percent (92.9%) of these students were required to take the course in partial fulfillment of a business degree program. Of the 175 students enrolled in these sections, 155 completed the survey—a completion rate of 88.6%. Those who did not complete the survey had stopped attending class or were absent on the day the survey was given.

STUDENT DEMOGRAPHICS

Of the 155 students who participated in the survey, 59.9% were male, and 40.5% were female (three students did not respond to this question). The majority of these students were classified as juniors and seniors (66.5% and 26.5% respectively); 7.1% were sophomores. Of the students surveyed, 81.3% were college age (18-22); 15.5% were between 23-27 years of age; and 3.1% were non-traditional students. Most of the students (76.8%) lived locally within a ten-mile radius of the university; the remaining 23.2% of students commuted. In addition to attending school, most of the students surveyed (73.5%) held full or part-time jobs; 26.5% were full-time students. Only 3.8% of the total number of students surveyed attended school on a part-time basis. Most of the students (92.9%) were single while 7.1% reported being in a household with spouse and/or dependents. Of the students surveyed, 66% were white, non-Hispanic, 17% were black, non-Hispanic, and 14.4% were Hispanic or Latino; 2.7% classified themselves as other.

WRITING EXPERIENCE

We were interested in knowing how much writing instruction the students had prior to enrolling in the required business communication course. Half of the students surveyed (50.3%) had been exposed to writing instruction within the last two years. Nearly a third (29.7%) of the surveyed students reported that they had taken a writing course within the last year while a fifth (20%) of students reported that it had been three or more years since their last writing course. Further, the majority of students in this study (81.9%) had taken the expected curriculum hours in college writing courses (freshman block) or had taken additional courses in writing prior to enrolling in the business communication course. Of those students surveyed, 41.3% reported having taken 4-6 hours of composition or writing at the college level while 27.7% reported having taken 7-9 hours, and 12.9% of students reported having taken more than 10 hours at the college level. Slightly less than 20 % of students (18.1%) reported taking only 0-3 hours of writing at the college level. As the majority of our business students take the required business communication course in their junior year of college, these percentages are consistent with the standard academic practice of taking composition courses during the freshman year.

The majority of these students (91%) indicated excellent and above average performance in their previous writing courses. Of those students surveyed, 38.1% of students reported making A's in previous composition or writing courses, 52.9% of students reported B's, and the remaining 9% reported C's. However, despite the fact that the majority of these students had been exposed to writing experience in the last two years and had achieved better-than-average performance in these courses, well over one-third (38%) of students surveyed reported that the material covered in the online writing software program was new to them.

OVERALL FINDINGS

What impact, if any, did the online writing software have on the students? Surprisingly, our overall findings were strongly influenced by the students' ability to navigate the online writing software (Q 16). On a scale of 1 to 10, students rated the ease of navigation a 5.3, about average when compared to other websites. We assumed that our tech-savvy students would have no difficulty in navigating the software with minimum instruction, but our findings suggest that time for additional instruction be made available to those students who need it in order to optimize the Web-assisted training for those individuals.

Predictably perhaps, those students who took over 20 hours (13.5%) to complete the assignment also experienced the most problems with navigation, and of those students who experienced problems with navigation, 70% said their writing did not improve. Our recommendations that follow our findings address ways of dealing with this issue. In this discussion of our research findings, therefore, we have divided the responses into two categories:

responses from those students who found the software easy to navigate, and responses from those students who found the software difficult to navigate.

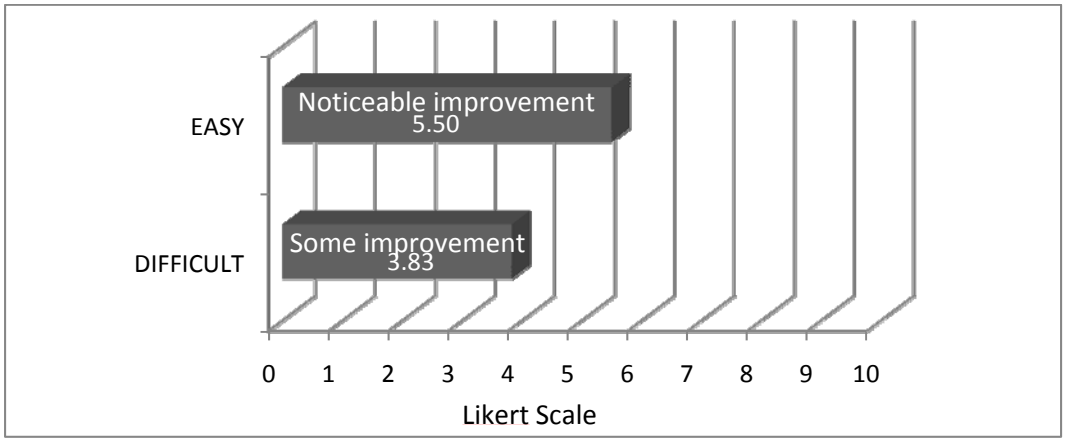
Our first research question addressed the students' perception of their own writing. Students were asked whether their writing had improved in six separate writing areas as a result of using the online writing software: grammar, punctuation, spelling, word choice, sentence structure, and paragraph development.

RESEARCH QUESTION 1

Does the use of online writing software result in significant improvement in the students' perception of the quality of their business writing?

Students were asked to rate on a Likert scale of 1 to 10 (one being the lowest and ten being the highest) how significantly they felt their writing had improved as a result of using the online writing software (Q24). Those students who found the software easy to navigate saw a noticeable improvement (5.50) versus those students who found the software difficult to navigate and only saw some improvement (3.83) as illustrated in Figure 2.

Figure 2:. Significance of writing improvement as a result of using online writing software.

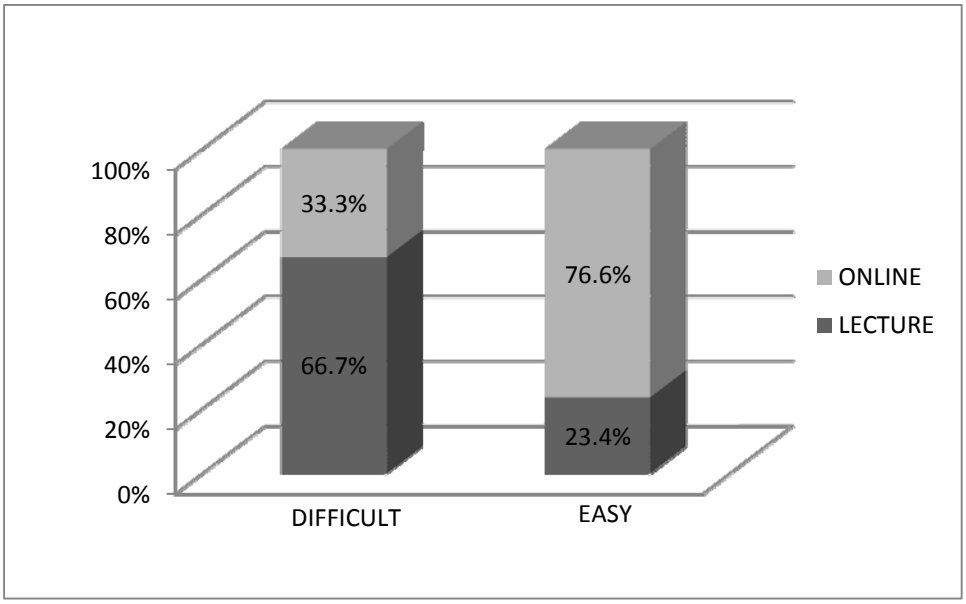


Students were also asked whether or not the quality of their writing improved as a result of using the online software (Q 27). Over half of the students surveyed (64.5 %) responded positively. Significantly, of those students who found the software easy to navigate, 85.1% felt that the quality of their writing had improved by using the online writing software, versus 45.1 % of those students who found the software difficult to navigate.

When asked which method of instruction they preferred for the grammar and basic writing component of the course (Q 17), 56.8% of students overall indicated that they preferred

the online writing software. But of those students who found the navigation easy, over three-fourths (76.6%) indicated that they preferred the online method. Not surprisingly, those students who found the software difficult to navigate, (66.7%) preferred lecture over online instruction as seen in Figure 3.

Figure 3: Preferred method of instruction for grammar and writing skills component of course.



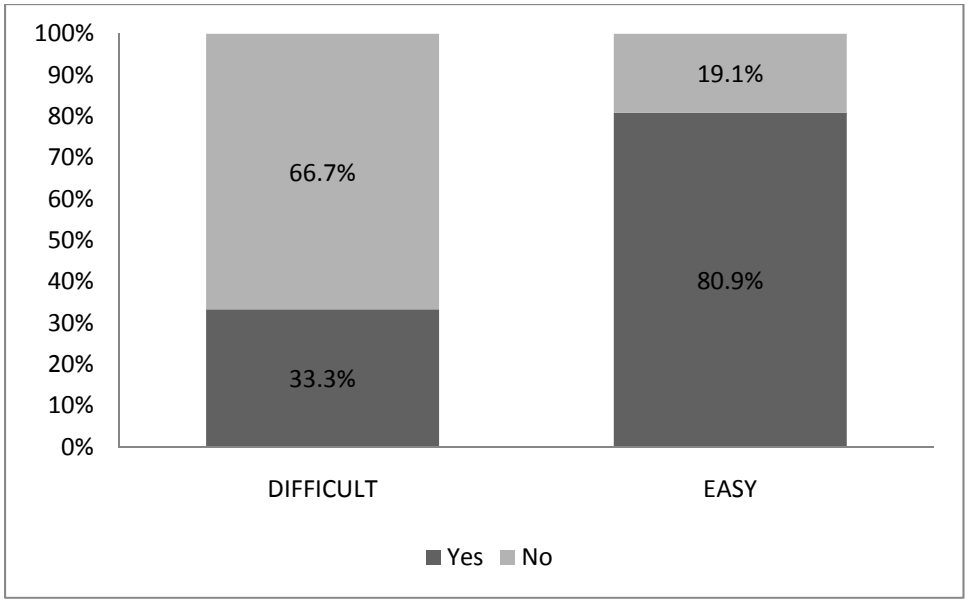
Further, when asked which method of instruction they preferred for each area of concentration, over half of students surveyed indicated that grammar, punctuation, spelling, word choice, and sentence structure were effectively addressed by the online software. However, 51.6% still preferred instructor-student interaction when learning paragraph development. Such findings suggest what teachers of writing have known for years. Individualized instruction is perhaps the best method for teaching higher-level writing skills.

RESEARCH QUESTION 2

Did the students' satisfaction and confidence in their writing and the writing process improve as a result of the online writing software training?

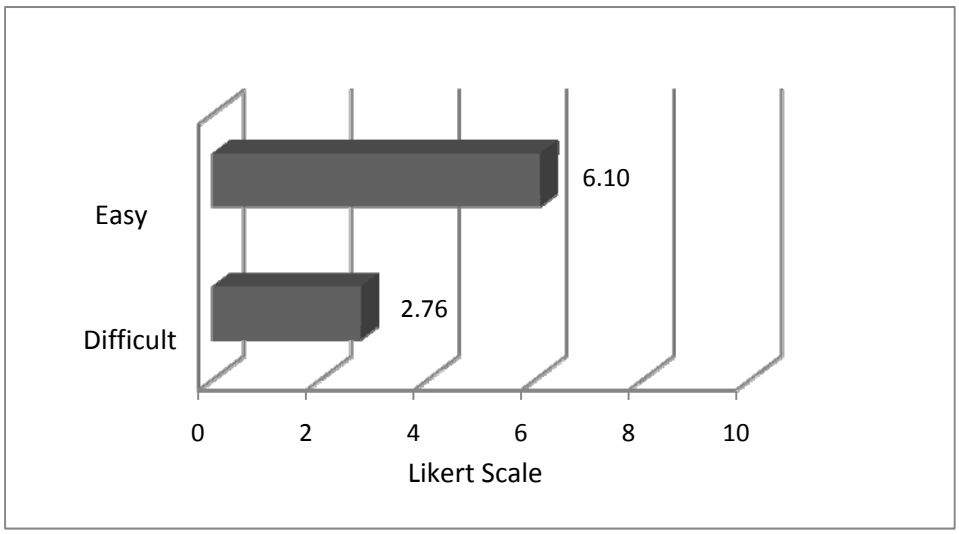
When asked (Q25) whether or not their satisfaction with writing and with the writing process had improved as a result of using the online writing software, 80.9% of students who found navigation easy responded affirmatively, as opposed to only 33.3% of students who found the software navigation difficult (see Figure 4).

Figure 4: Improvement in writing and with the writing process after online writing software



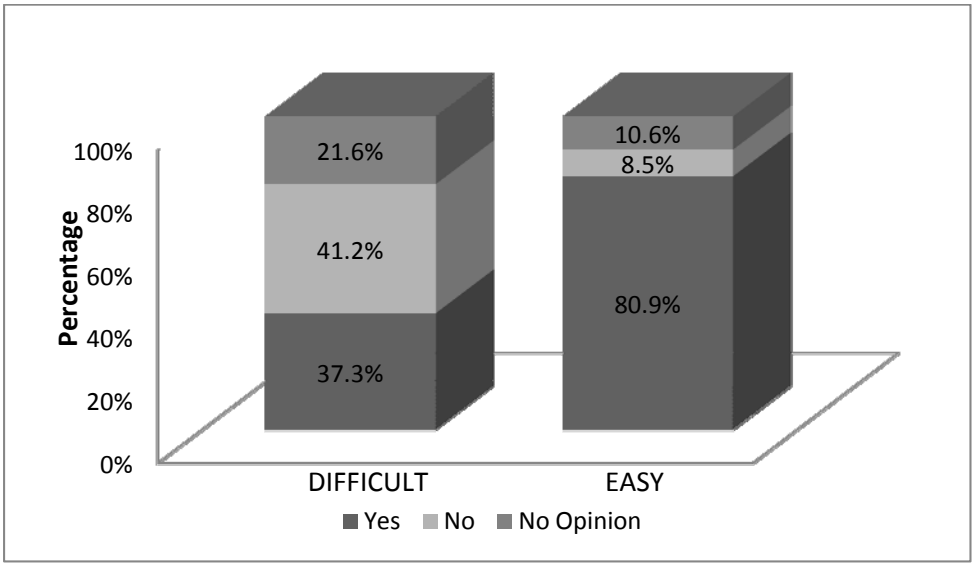
When asked to rate the significance of their satisfaction (Q26) on a Likert scale of 1 to 10 (one being the lowest and ten being the highest), the overall rating of 4.79 ranged between somewhat significant and very significant. Even more impressive, however, Figure 5 shows the wide differences in student satisfaction in their writing between those who found the software easy to navigate (6.10) and those who found the software difficult to navigate (2.76).

Figure 5:. Significance of student satisfaction as a result of using the online writing software.



When asked if they would recommend using online writing software as a supplemental tool in the business communication classroom, 59.4% overall said yes (Q28). More significantly, however, Figure 6 illustrates that 80.9% of students who had few problems with navigation recommend using the supplemental online writing software in writing-intensive courses.

Figure 6: Percentage of students recommending using online writing software as a supplemental instruction tool in writing-intensive courses.



We also asked students how much more confident they felt in each of the areas of concentration after using the online writing software (Q 20). Using a Likert scale of 1 to 9 with one being low and 9 being high, overall, students rated their confidence in all areas as moderately confident following their workouts: grammar (5.34); punctuation (5.50); spelling (5.6); word choice (5.52); sentence structure (5.39); paragraph development (5.3). Figure 7 indicates an even higher level of confidence among those students who found software navigation easy, and a lower confidence level among students who found the navigation difficult.

When we asked the students if they had applied the information they had learned to their writing assignments (Q 22), we saw again a measurable difference among those students who found software navigation easy, and among students who found the navigation difficult as illustrated in Figure 8. Our overall findings, however, were positive with 82.6% of students indicating that they had been able to apply the grammar skills and 82.6% indicating that they had been able to apply punctuation skills. About 75% of students said they had applied spelling and word choice skills to other assignments and a slightly higher percentage of students had applied sentence structure (79.4%) and paragraph development skills (78.1%) to other writing assignments.

Figure 7: Student confidence in writing specific areas after writing software training

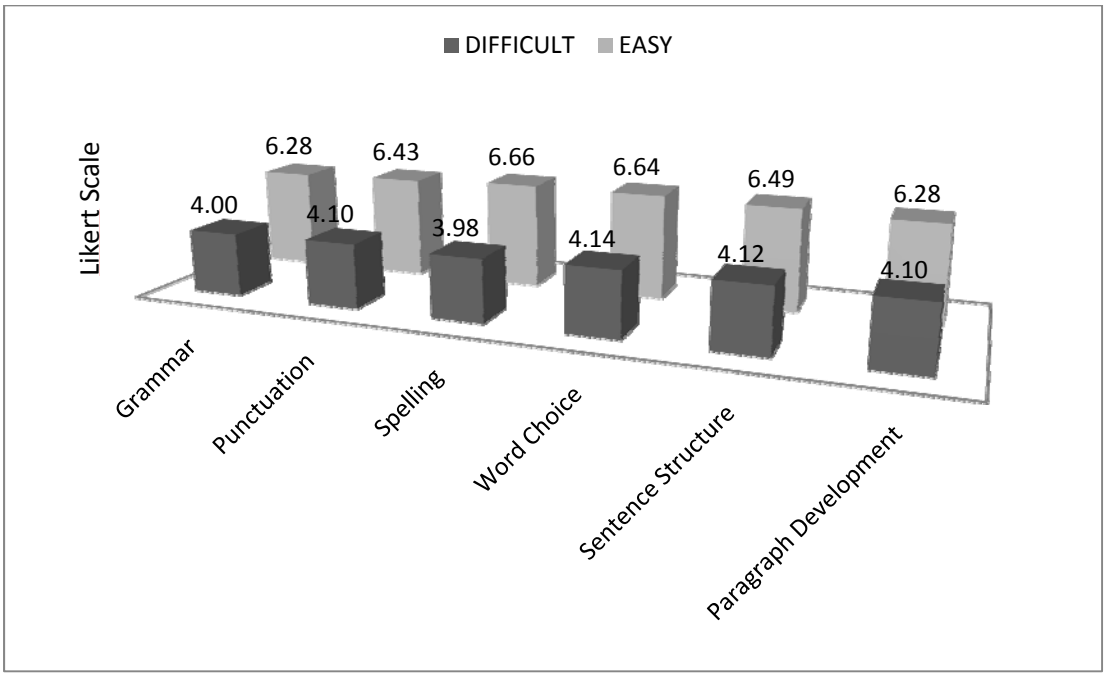
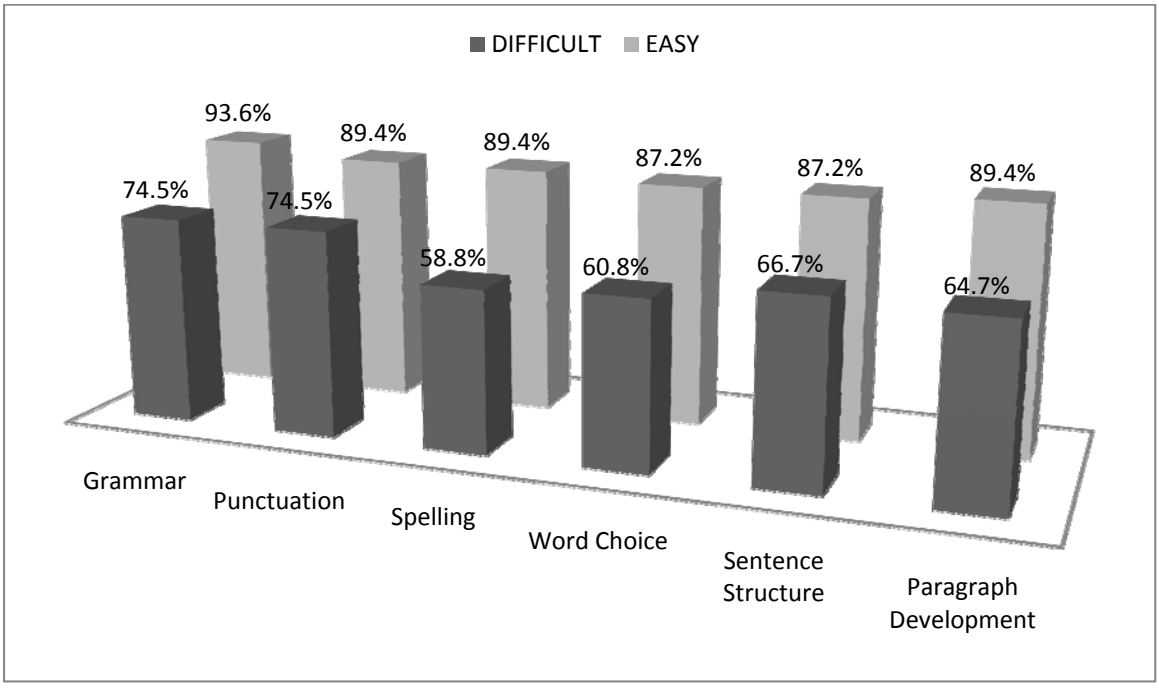
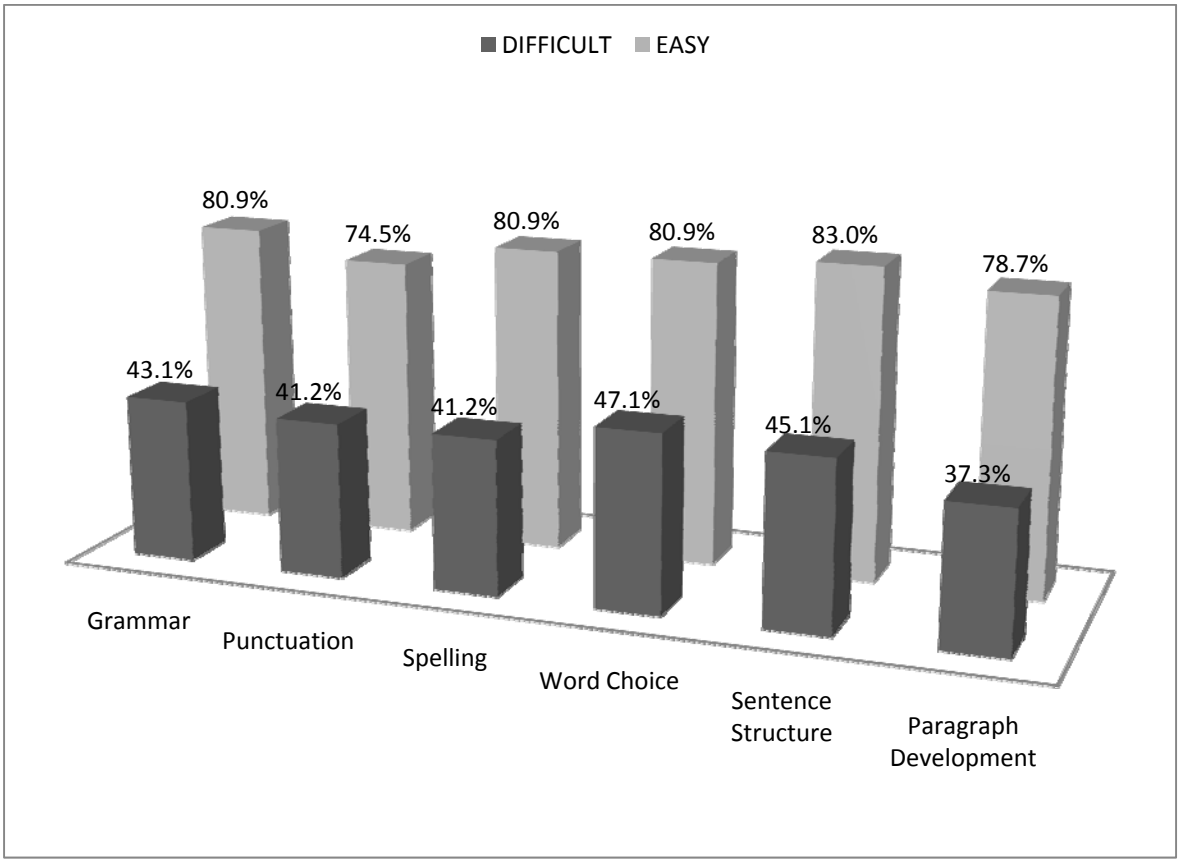


Figure 8: Application of information learned to other writing assignments



We also wanted to know if the students felt that the software accurately assessed their writing skills (Q 23). Again, our findings depended on whether or not the students had difficulty navigating the software. Generally, the higher ratings on the software's ability to accurately assess student competency in each of the areas (fluctuating between 75-83%), were reported by students who found the software navigation easy as seen in Figure 9. In general, however, most students felt that the software assessment was accurate with an overall rating of 66.5% in grammar, a 64.5% rating in punctuation, a 65.8% rating in spelling. A 64% rating in word choice, a 66.5% rating in sentence structure, and a 61.9% rating in paragraph development.

Figure 9: Accuracy of skills assessment in evaluating individual writing skills.



RESEARCH QUESTION 3

Does the use of online writing software allow more classroom time for writing practice and the development of business messages?

Online writing software allows students to work independently and targets only those areas in which each individual needs additional instruction or review. We spent less class time addressing fundamental skills in grammar, punctuation, spelling, word choice, and sentence structure, and were able to focus more on the strategy and development of business messages in direct and indirect inquiries, persuasive requests, and report writing.

CONCLUSIONS AND RECOMMENDATIONS

Students who have weak grammar and technical skills tend to be less than enthusiastic about writing and the writing process for fear of making mistakes. This fear, along with their inner critic (worse than any instructor they might encounter at the college level), often inhibits their ability to engage in and produce an assignment.

In this study, students who initially focused on correcting their grammar and style issues at their own pace with the online writing software found that they were better prepared to address strategy and development of their business messages later in the course. They were also less inhibited about the writing process. Our findings indicate that their satisfaction with and confidence in the writing process had improved as a result of using the Web-based writing instruction. In addition, we found that their perception of the quality of their writing had improved.

The instructors in this study spent less class time addressing fundamental writing skills and were able to focus more on the strategy and development of business communication. Although this study did not measure the pre- and post-training quality of the student writing, the instructors generally saw an improvement in the technical aspects of writing that the students submitted for evaluation. Our upcoming study in error etiology will explore in more detail the quality of the writing submitted for evaluation before and after students complete the online writing software assignment.

Our findings clearly indicate that the students' ability to navigate of the software is essential in achieving a higher level of student performance and satisfaction with their writing and with the writing process. Despite their familiarity with various types of software and computer use, our students are not necessarily proficient in navigation nor were they particularly motivated to spend time troubleshooting the software. Our students rated our 30-minute instruction as moderate (3.31 on a scale of 5.0). Consequently, we recommend the following:

- Devote at least one class session and short follow-up sessions to familiarize students with software navigation and overall assessment;
- Set deadlines for the completion of each skill section and require 100% completion score on each mini-lesson;
- Assign Web-based instruction during the first half of the semester so that students are better prepared for graded writing assignments later in the course.

In closing, composition research indicates that students are actually more linguistically competent than we may think. John C. Bean (2001) offers three signs of what he terms *encouraging competence* beneath our students' mangled prose. First, many student errors are simply the result of careless editing and proofreading. Haswell's (1983) system of minimal marking (marking an X in the margin next to lines that contain the errors) encourages students to find and correct approximately 60 percent of their own sentence errors (comma splices, dangling modifiers, misspellings, etc.). Second, Bean recommends having the students read their drafts aloud citing Bartholomae's (1980) research which indicates that oral rendering of writing allows students to unconsciously correct most of their written errors. And finally, because student errors are classifiable and systematic (Shaughnessy, 1977), we can help students understand their causes and teach the specific skills necessary to overcome repetitive errors (Bean, 2001). The skill-specific, individualized nature of Web-based writing instruction can help students identify and overcome their technical weaknesses so that they can become competent in the social conventions of language usage and use language in appropriate business contexts.

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AN INTEGRATED MODEL FOR PRACTICING REFLECTIVE LEARNING

Patricia Ann Castelli, Lawrence Technological University

ABSTRACT

The purpose of this paper is to provide an insightful background of the theories that have shaped the evolution of reflective/transformative learning, to present an integrated yet simple model to assist instructors in understanding their role (and the students' role) in promoting meaningful reflective learning experiences, and to provide practical and concrete teaching guidance for instructors seeking to learn the basic elements and techniques necessary for applying reflective learning in their classrooms.

KEYWORD(S): Reflective Learning, Transformative Learning, Adult Learner

INTRODUCTION

Although not practiced consistently or purposely in classroom experiences, reflective learning is not new to higher education. Previous research by Carson and Fisher (2006) uncovered that John Dewey (1933) is considered a key originator in coining this term. In 1962, Thomas Kuhn's groundbreaking *The Structure of Scientific Revolutions* described how new assumptions (paradigms/theories) require the reconstruction of prior assumptions and the reevaluation of prior facts. He further states that "when a shift takes place, a scientist's world is qualitatively transformed [and] quantitatively enriched by fundamental novelties of either fact or theory" (p. 7). Kuhn called this shift a 'scientific revolution' that sounds similar to a term used today – transformation. Through the years, significant research has expanded and formalized the process of reflective learning with related concepts such as critical reflective learning and transformative learning in the field of adult education (Schön, 1983; Brookfield, 1995; Mezirow, 1978, 1990; Mezirow & Taylor, 2009). In addition, many practitioners (Cranton, 2002, 2006; Carson and Fisher, 2006; Fisher-Yoshida, 2009; Fisher-Yoshida & Geller, 2008, 2009; have shown various ways to integrate reflective/transformative learning in their classroom experiences. And although longitudinal studies are few and far between, Taylor (2007) states that reflective learning is gaining momentum with significant increases in promoting and practicing transformative learning in higher education internationally.

The purpose of this paper is to provide an insightful background of the building blocks that have shaped the evolution of reflective/transformative learning, to present an integrated yet simple model to assist instructors in understanding their role (and the students' role) in promoting meaningful reflective learning experiences, and to provide practical and concrete teaching guidance for instructors seeking to learn the basic elements and techniques necessary for practicing reflective learning in their classrooms.

The subject matter presented was developed in several syllabi for global leadership coursework in a graduate college of management. However, once the reader gains sufficient background knowledge of the foundational theories that form the basis for reflective and transformative learning and understands the process and related techniques necessary for promoting reflective learning, instructional activities and exercises can be modified and customized to fit a variety of subjects and fields of study.

BACKGROUND

Jack Mezirow introduced the concept of transformative learning to the field of adult education in 1978 and defines transformative learning as "an approach to teaching based on promoting change, where educators challenge learners to critically question and assess the integrity of their deeply held assumptions about how they relate to the world around them" (p.xi). Although reflective learning, critical reflective learning and transformative learning are often used interchangeably, transformative learning implies change. But the fact remains that none of these methods of learning necessarily *guarantee* change.

Transformative learning is a multi-faceted learning theory. There are many foundational learning theories that influenced and shaped transformative learning. Most notable of these include elements from adult learning and instructional design, experiential learning, and the social sciences. Knowledge of these theories provides the context for understanding transformative or reflective learning.

Adult learning theory and instructional design

Although there are a multitude of definitions, Boyd (1980) defines learning by emphasizing the *person* in whom the change occurs as "the act or process by which behavioral change, knowledge, skills, and attitudes are acquired" (pp.100-101). This is a differentiating factor since there are specific aspects involved with adult learning theory that do not apply to non- adults such as life-centered, experience and self-directing. Knowles, Holton III and Swanson (2005) describe the importance of problem-solving, life-centered, personal experience and a strong need to be self-directing in the adult learning process. Knowles, et al., further state that adult learners tend to become resistant when placed in situations where they are not allowed

to be self-directed. This is a critical aspect of reflective learning which is based on independent learning and personal experience.

Wlodkowski (1985, 1999) reinforces Knowles' beliefs concerning the importance of blending personal experience of the learner into the instructional design process. Wlodkowski (1999) believes that all learners possess intrinsic motivation and that the instructor's role is to bring out this motivation by using a variety of strategies aimed at deepening their innate desire to learn. According to Keller (1987), Keller and Kopp (1987), designing motivating instruction for the adult learner must include finding ways to capture the learner's attention, creating relevance, promoting confidence and producing a satisfying learning experience. Castelli (1994, 2006) suggests guidelines for enhancing interest, effort and performance in classroom instruction. These include finding motivating ways to capture the learner's interest by ensuring the instruction is designed to meet their personal needs, creating a safe learning environment by building credibility in the classroom, and finding relevant ways to challenge the learner by assigning projects and tasks designed to derive personal satisfaction from the learning experience.

Gessner (1956) states that one of the chief distinctions between conventional and adult education is to be found in the learning process itself:

> *In an adult class the student's experience counts for as much as the teacher's knowledge. Both are exchangeable at par. Indeed, in some of the best adult classes it is sometimes difficult to discover who is learning most, the teacher or the students. (p. 166)*

Therefore, the role of the instructor is no longer the authoritarian; rather, the instructor is viewed as coach, mentor, and guide. Fisher-Yoshida (2009) stresses the importance of coaching in the transformative learning process:

> *As a coach, my purpose is to act as a guide to provide opportunities that will foster transformative learning. Typically this involves the other person's being able to see more broadly than her own point of view and to understand that her opinions are formed by her experiences and that they are loaded with assumptions and expectations that may not be shared. (p. 157)*

Similarly, Castelli (2008) found that coaching and building self-esteem are the most critical aspects followers' desire from their leaders:

> *A leader's ability to build followers' self-esteem is viewed as vital. Consistency should also be maintained in order to produce ongoing effort and to sustain*

interest. However, interest and effort may decline if the leader fails to establish trust or undermines the capabilities of the followers' worth. (p.13)

Experiential learning

Simply put, experiential learning is learning from experience. Kolb (1983), an experiential learning theorist, reasoned that people learn more from their experiences when they spend time thinking about them. Along these lines, Hughes, Ginnett and Curphy, (2009) extended this notion by developing the Action-Observation-Reflection (A-O-R) model which shows that leadership development is enhanced when the experience involves three different processes: action, observation, and reflection. Hughes et al., state:

If a person acts but does not observe the consequences of her actions or reflect on their significance and meaning, then it makes little sense to say she has learned from an experience. Growth occurs as a result from repeated movements through all three phases rather than merely in terms of some objective dimension like time. (p.54)

The growth process referred to is called the spiral of experience. And when leaders (individuals) take the time to reflect on their actions, observe their behaviors, and reflect on how they would do things differently, they are more apt to change. Hughes, et al., go on to claim that repeated movements through the spiral of experience (A-O-R) model is the most productive way to develop as a leader (person). Cranton (2002) agrees with the spiral-like approach: "We cannot critically reflect on an assumption until we are aware of it. We cannot engage in discourse on something we have not identified. We cannot change a habit of mind without thinking about it in some way" (p. 65).

The values and attitudes of the learner are important and play a central role in reflective learning process. Fisher-Yoshida (2009) states that:

If we are not familiar with our core values and why we think and act the way we do, then we are destined to be reactive rather than reflexive. We would also relegate ourselves to remain in third order of consciousness and single-loop knowledge. (p.178)

Argyris (1976) describes single-loop learners as ones who do not seek feedback or constructive criticism from others particularly when it confronts their fundamental ideas or actions, and little time is spent reflecting about beliefs. Therefore, single-loop learners are destined to repeat ineffective patterns. On the other hand, double-loop learners are willing to confront their views and beliefs and encourage others to do so. Double-loop learners are most

apt to reflect on their experiences and change since they are not afraid to learn and grow beyond their comfort zone.

The social sciences

The social sciences of psychology, spirituality, and sociology have also contributed to transformative learning. It is important to recognize these contributions since they mostly involve change, which is a critical component of transformative learning. The pioneering work of clinical psychologists such as Jung, Erickson, Maslow and Rogers emphasized the influence of the human consciousness, self-concept and behavior. Their groundbreaking theories (the psychology of being and the psychology of becoming, growth-oriented and self-actualization) continue to be important factors in understanding human development and learning. Carl Rogers' (1951) student-centered teaching approach to education viewed the learning process as an internal process that is controlled by the learner. Furthermore, he stated that we cannot teach another person directly; rather, we can only facilitate their learning.

Dirkx (1997) sees transformative learning as "soul work" and suggests a holistic view of self that reflects the intellectual, emotional, moral, and spiritual dimensions of our being in the world. Dirkx states that "those of us who take seriously the 'transformative' in transformative learning are interested in a kind of 'deep' learning that changes existing, taken-for-granted assumptions, notions, and meanings of what learning is about" (Dirkx, Mezirow and Cranton (2006, p. 126). Quinn (1996) states that "deep change is necessary to maintain excellence and that risk taking and learning precipitate any transformation" (p. 167). Quinn further believes that every system is continuously evolving. This evolutionary process is described by his transformational cycle. This cycle has four distinct phases: initiation, uncertainty, transformation, and rountinization. Quinn contends that the opposite of deep change is slow death. He explained the concept of slow death to a practicing psychologist who made an interesting comment:

> *At the personal level, I deal with this issue every day. Every time a client comes to me with a problem, what I find is that the person is experiencing slow death. What I try to help such persons see is that they have a choice. They can continue to experience slow death, or they make a deep change. Most do not have the courage to engage the process of deep change, and so most are not cured. The challenge is to provide them with enough encouragement, help, and support that they dare to try. (pp. 23-24)*

This coincides with Brown and Posner's (2001) findings that leadership development programs and approaches need to reach leaders at personal and emotional levels, triggering critical self-reflection, and providing support throughout the change process.

Sociology and social psychology have also contributed to the knowledge of the behavioral sciences of groups and larger social systems that facilitate or inhibit learning and change. And most recently, the expansion of multi-cultural dimensions and the effects of globalization have changed the way we view the world. Likewise, to be effective, current and aspiring leaders must embrace the 'new world' by challenging their own values, beliefs and assumptions while respecting the views of others.

TRANSFORMATIVE LEARNING IN PRACTICE

The instructor's role as promoter of transformative learning is equally as important as the student's performance when attempting to insure the efficacy of this approach. When incorporating reflective learning into a course or curriculum, an integrated approach is recommended and illustrated in Figure 1. An integrated model for incorporating reflective learning in adult instruction consists of five major elements: openness, purpose, meaning, challenging beliefs, and ongoing dialogue and feedback (Castelli 2011).

The instructor's role in creating openness is an essential first step. Provided that a safe learning environment and an atmosphere of trust are created by the instructor, students will be more apt to share their personal experiences. Early instructional events that contrast single-loop and double-loop learners will also be helpful by reinforcing the latter. This is particularly true when it comes to changing assumptions. Importantly, the instructor can garner trust quickly by sharing her/his personal experiences first, mistakes made and valuable life lessons learned.

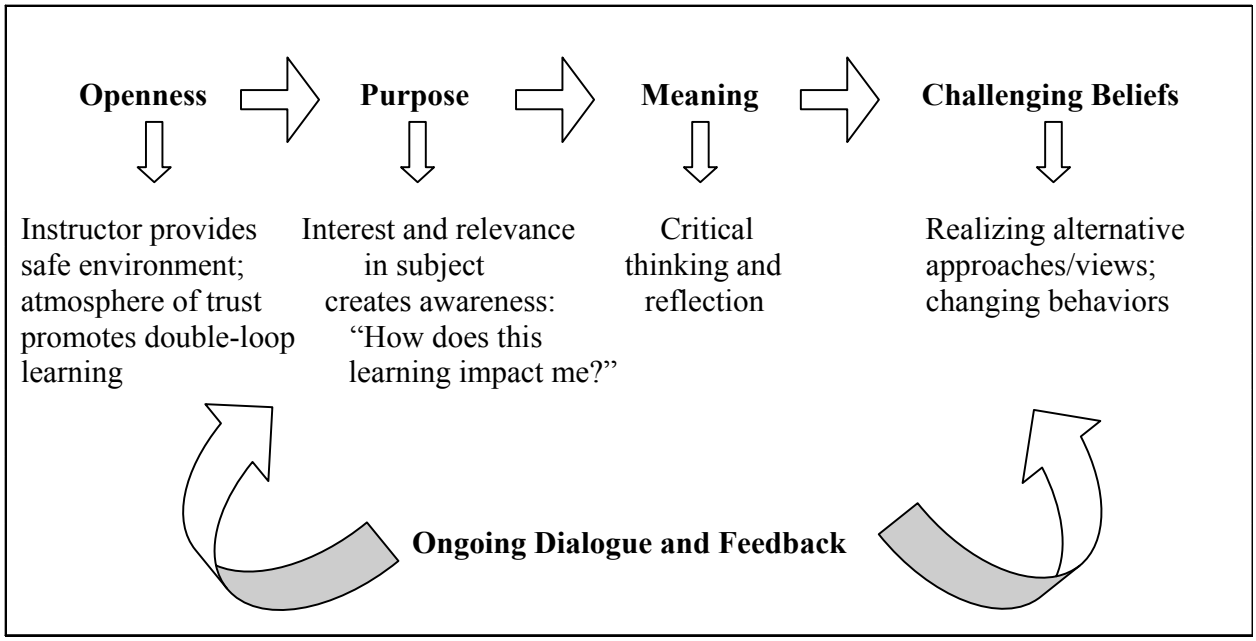
The second element of purpose can best be described in terms of what is relevant to the learner. What sparks the learner's interest? And how does this learning impact the student? Notice that the emphasis is on the learner and attuning to her/his needs. Providing instructional opportunities that relate specifically to the learner and experiences that encourage her/his personal and professional development will indeed be purposeful for the learner.

Finding meaning and significance in the learning experience requires critical and reflective thinking. New awareness causes the learner to question conflicting thoughts and assumptions. This provides meaning and is the third step in the process.

Once the learner finds meaning in a personal learning experience, the learner may find that current beliefs may not be accurate and she/he will begin to consider and search for alternative approaches and concrete ways to change behaviors. This is the fourth stage in the process. A feeling of open-mindedness and willingness to look at alternative or atypical ways of making sense of things occurs. This is commonly referred to as double-loop learning.

Creating opportunities for ongoing dialogue and feedback must be planned and intentional. To be effective, dialogue and feedback should occur one-on-one (between learner and instructor) as well as during planned group discussions and dialogue. This critical step occurs throughout the learning process with the goal of providing ongoing feedback, shared support and coaching.

Figure 1: An Integrated Model for Incorporating Reflective Learning into Adult Instruction



Castelli (2011)

GLOBAL LEADERSHIP APPLICATIONS

The following section describes the explicit strategies embedded in student projects and assignments used to support reflective/transformative learning for global leadership applications. Leadership 360 Evaluation – A 360 Evaluation is a multi-perspective gap analysis feedback tool. Students develop a leadership assessment and distribute the survey to a wide variety of respondents (supervisor, peers, customers, vendor/suppliers and self). The outcome of the evaluation provides insight for leadership strengths and development areas. A written report that includes a development plan is created to improve performance and behaviors within an organization.

Leadership Interview

Students select a senior leader to interview using structured questions focused on valuable leadership experiences. These include the importance of reflection and learning from mistakes, and gathering insights and advice for developing leadership skills. Students review classmates' interviews, trends are analyzed, and key learnings are discussed.

Transnational Leadership Development Exercises

Using Fisher-Yoshida and Geller's (2009) *Transnational Leadership Development: Preparing the Next Generation for the Borderless Business World* text, students' complete case studies, assessments and exercises designed to challenge their values, beliefs and assumptions. The book identifies five paradoxes of cross-cultural interaction (knowing, focus, communication, action and response) that teach students to view the world differently by finding new and more effective ways to communicate, and move forward in a global context while critically reflecting upon the effects of their actions. The end product is a completed workbook that assists students in understanding their strengths and development needs.

The Reflective Consolidation Paper and Presentation

A 'reflection' paper allows the student to find meaning in the learning experience by standing back at the end of the course to analyze and synthesize the learning experiences that have taken place both inside and outside of the classroom and to see how such learning experiences, including shared experiences and competencies of other students, translate into future actions in the workplace and in their academic program. Students discuss three insights that they found most valuable for their professional leadership development. For each item, students contrast their former beliefs with their new beliefs and explain how this new way of thinking has expanded the thoughts they now have about themselves and others. Students describe the new behaviors they are practicing for their continued leadership growth and development.

The instructor's role also played a critical part in promoting reflective/transformative learning. Strategies included the following:

- Illustrations of previous students' work was shared and discussed with the class to provide 'real' examples of critical reflection in action. Sharing previous work also helped students understand the expectations for each deliverable.
- Reinforcing questions were used at the end of each project and assignment by asking students to summarize their key reflections as a result of the activity. This was useful for both in class discussions and assisted students in preparing for the final exam – the Reflective Consolidation Paper.
- Critical reflection incidents were modeled during class sessions (as well as one-on-one) when providing guidance and feedback to students. By the instructor 'going first' students felt more comfortable and open about sharing their personal experiences.

Examples of student responses

The Reflective Consolidation Paper served as the final exam. Student papers were evaluated to determine whether or not they were able to reflect upon their current values, beliefs

and assumptions, and to then question the validity of them. Quotes from students' work are identified according to the order in which papers were received (Student 1, 2, 3, etc.). The following summarizes some of the highlights from their work.

> *The Paradox of Action (Fisher-Yoshida & Geller, 2009) was a revelation regarding preconceived assumptions and the potential pitfalls it may cause. The "On Action" and "In Action" differences were so subtle yet so obviously important skills of a good manager. The "On Action" portion of the exercise stresses the need to reflect on what has happened, as fact, and not as opinion. I learned that I need to focus on trying to understand what transpired in the past, and what the motivations of others might be, instead of reviewing what happened though my own perspective. I need to practice being a critical judge or third party to interactions between others, and myself to fully appreciate what happened. I used to believe that a good communicator was able to steer a conversation by making points and arguments to move people in one direction or another. Now, armed with this reflective knowledge, I learned that I need to become a third party to my own interactions with others, while they happen, and evaluate the "In Action" situation. (Student 1)*

> I *was born and raised in India, having spent my childhood in two of the largest cities in India, first in Calcutta, and then later in Bombay. My assumptions, values, beliefs and my cultural background - the personal Social Identity Map (SIM) influenced how I reacted and I had to adjust. This class has taught me to understand and appreciate better the whirlwind of emotions I felt at that time, and why I was frustrated. Now that I understand it, I know what it takes to adjust, and what to watch out for. This course has offered me a lot of insight into myself, my values, who I am, what my SIM's are and how they affect me, making me who I am. It also helped me to understand how others see me, and helped me to adjust so that they understand me better. I learned from this course that behavior can be changed, and adjusted. This course has offered me new insights into behavioral approaches, and provided me capabilities. I am confident my actions at present will greatly benefit me and others around me, and I intend to stay the course. (Student 2)*

> *The paradox of knowing, I felt, was a very important section of the entire text and a very important aspect to address: one's self, then others. In my opinion, being a leader of any kind, at any level, first calls for that particular individual to honestly be able to distinguish who they are as a person before he or she can effectively lead a team, group or an organization. Also, within that same team,*

group or organization, every individual, leader or not, should be taking that same practice. This in effect builds a "knowledgeable workforce". After reading the paradox of knowing section of the Transnational Leadership text (Fisher-Yoshida & Gellar, 2009), my thoughts were that social and cultural preferences of the individuals involved help make the identity of a global workforce. The combination of all of these individual opinions and preferences culminate (hopefully) into the creation of an all-inclusive work culture, climate and structure that is conducive to all participants. This experience showed me the value of differing opinions and perspectives which has thus been a great asset in my professional and personal development. (Student 3)

What I realized from my leadership interview was that I should be doing emphatic listening, seeking first to understand. I learned that my leader was listening with his ears, eyes and heart - he was listening for feeling, for meaning. I brought this to the MBA classroom discussions and now I find myself doing a lot of emphatic listening. I also started to practice emphatic listening in my own College classroom and coached my students to remove their own pre-conceived notion of active listening and try listening with their eyes, ears and heart at the same time. Hopefully, this is a value that they will practice consistently. This course has offered me a lot of insight in the various styles of leadership and the values and competencies that a leader should have. It also afforded me the opportunity to examine my own leadership qualities, values and behaviors and "fine-tune" the ones to make me a better and effective leader. It also helped me to understand how others see me, and helped me to adjust so that they understand me better. I learned from this course that behavior can be changed, and adjusted. This course has offered me new insights into behavioral approaches, and provided me capabilities. Having this, now I can adjust myself to the situation at hand. (Student 5)

This reflection paper is unique in that the single most important thing that I have learned in this course is to reflect. In essence, the reflection in this paper is a direct result of learning how and what to reflect upon during this course. Examples are: reflecting on myself, my values and the values of others; reflecting on my communication with others and lastly, reflecting on my actions, before, during and after them. All of these paradoxes had a great impact on me and really made me evaluate the way I have handled situations in the past and how I should approach similar situations in the future. Also, from a different perspective, I see how this new knowledge of the global workforce can help me to better understand

international co-workers and improve my working relationship with them. (Student 6)

In learning about and exploring the various paradoxes presented in the Yoshida text, each one forced me to think about my behavior as a manager in a different way. My predetermined assumptions were challenged about the best way to manage employees, communicate with customers, or interact with my superiors. The exercises provided in each chapter forced me to take these challenged assumptions and revamp my philosophies to gear towards a global workforce. The most important skill that this course has taught me is how to use reflection to better myself both personally and professionally. (Student 11)

Managing a Global Workforce wasn't a required class for me but, an elective. I registered for the class thinking that I would learn further concerning how to manage the workforce and how to handle uncomfortable situations that I may encounter. Instead I was compelled to slow down and meet the (now) inner me. I was compelled to think about "what would you do?" situations. I was compelled to think about my actions first and then the employee, share with others (classmates) my thoughts, which was a biggie for me and I learned that I hold the answers to different outcomes of uncomfortable situations that I may encounter with my verbal and physical actions. (Student 12)

What I will take away from the paradox of action is more than a lesson; a reassurance that what has transpired for me personally over the last five years will definitely help me in the future as I take on my next leadership role which I hope will be of a transnational leader. I believe I will be doing a lot of reflection on what I have said or did [done] and hope to transcend more of the "being" than "doing" with my subordinates and peers. I believe that understanding the paradox of action and the key points the author makes not only will make me a more effective leader but a more wholesome individual. (Student 13)

According to Mezirow's (1978) definition of transformative learning as "an approach to teaching based on promoting change, where educators challenge learners to critically question and assess the integrity of their deeply held assumptions about how they relate to the world around them" (p.xi), it appears that the above examples show that a significant degree of learning occurred for students reflecting on their experiences in the global leadership course.

EVALUATING THE EFFECTIVENESS OF REFLECTIVE LEARNING

To evaluate the usefulness of reflective learning, students were asked to comment on the value of reflective learning on their professional and personal lives using end-of-term evaluations. Quotes from students' are identified according to the order in which comments were received (Student 1, 2, 3, etc.). The following summarizes some of the highlights regarding the impact of reflective learning. It is important to note that of a total of 18 students from two course sections, all feedback was positive.

> *As a result of practicing reflective learning, I learned how to use more empathy in my communication[s] by putting myself in another's shoes. (Student 1)*
>
> *Reflective learning compelled me to slow down and meet the (now) inner me. I was compelled to think about what would you do situations? I was compelled to think about my actions first and then the employee, share with others (classmates) my thoughts, which was a biggie for me and I learned that I hold the answers to different outcomes of uncomfortable situations that I may encounter with my verbal and physical actions. (Student 2)*
>
> *I have learned that there is an individualistic ingredient in successfully completing this degree program. The solutions to conflicts and crises are not always as convenient as applying a formulae, but requires thought, action, and to be successful, reflection. This reflective stage is what many times is overlooked in our daily actions. (Student 4)*
>
> *Reflection taught me to process internally what you are about to say or do before doing; the being before doing. I know this is effective because at work, people have recently said, "You are quiet but when you say something, you mean it." My husband has been saying lately to me, "Boy you have changed, you don't talk anymore." My response to him is, "I have nothing of worth to say," apparently a lot of talking I was doing before was unnecessary for I am today who I was 22 years ago. Rather, I have begun to internalize my actions. I once heard someone say, "It is better not to say anything than to say nothing," and thought what? Well now I see. (Student 9)*
>
> *Through reflecting I discovered different attributes about myself. Throughout this course my understanding of management techniques, as well as, my understanding communications styles has drastically changed. Before this class my international interactions have been minimal. After taking this course I have*

a better understand[ing] of what is involved in managing, leading thanks to reflection. (Student 10)

This course was unique in that the single most important thing that I have learned is to reflect. In essence, reflection is a direct result of learning how and what to reflect upon both from personal and professional standpoints. Reflecting on myself, my values and the values of others; reflecting on my communication with others and lastly, reflecting on my actions, before, during and after them. All of this had a great impact on me and really made me evaluate the way I have handled situations in the past and how I should approach similar situations in the future. (Student 11)

Now, armed with this reflective knowledge, I learned that I need to become a third party to my own interactions with others, while they happen, and evaluate the "In Action" situation. During a conversation with another person, I need to dynamically evaluate my progress towards my communication goals. To step out of the preconceived ideas of the situation, and to step out of the emotion of the moment, and to understand how the other person is relating to the conversation, and whether I am moving towards or away from my goals. (Student 12)

CONCLUSION

Reflective learning is built upon a variety of other educational theories and is therefore considered a multi-faceted learning theory. Reflective learning draws from elements of adult learning and instructional design, experiential learning, and the social sciences. Knowledge of these theories is necessary and builds the foundation for instructors to understand and practice reflective learning effectively. Incorporating relevant and consequential instruction is motivating for students' and allows for successful transformative or reflective learning to occur in the classroom experience.

In order for students to question their current values, beliefs and assumptions, the instructor must also create a learning environment that is safe, encouraging self-expression on the part of the student. Providing an atmosphere of trust promotes double-loop learning and openness to share experiences. The instructor must also find valuable ways to create interest and relevance in the learning experience by viewing learning from the student's perspective and by finding ways to make the instruction meaningful. This is best achieved by relating to and capitalizing on the learner's life experience from both personal and professional standpoints. Creating excitement for the learner and answering the question "how does this learning impact me?" is the best way to engage students in the learning process. Providing frequent and ongoing ways to challenge and cause the student to critically think and reflect upon their current views

opens the door for a new way of thinking and behaving. Once the student understands that she/he is safe to step out of his/her comfort zone and has the support from the instructor and fellow classmates, alternative approaches and views can be realized. This new view can be reinforced by regular and open dialogue.

As Taylor states (2007), there is clearly a lack of empirical studies that test the theory of transformative learning and the corresponding change in learners' behaviors from personal/professional development perspectives. However, this does not undermine its value or the importance of promoting transformative learning in higher education. For if the goal of higher education is to cause learners to think independently, learn from their experiences and become better problem-solvers, then putting the theory to the test in terms of reflective or transformative learning is a sound practice.

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AUTHOR'S NOTES

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INTRODUCTORY ACCOUNTING FOR BUSINESS MAJORS: REVISITED

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ABSTRACT

This paper reports on a research project in the area of accounting education. Business faculty members at three colleges/universities were surveyed for their opinions about the essential accounting knowledge needed by business majors. This project was designed to provide necessary information for evaluating and developing curricula for principles of accounting courses in colleges and universities. The objectives of the study were to: (1) identify a common body of accounting knowledge essential for business majors, (2) determine the level of knowledge perceived to be necessary for the various topics in the common body, and (3) compare the perceptions of business faculty members by discipline.

The study results show faculty agreement on a common body of knowledge for the principles courses. The perceived levels of knowledge identified by all faculty members are in line with the Position No. 2 by the Accounting Education Change Commission. Although there were no significant mean differences in comparing the responses by school, there were significant differences in comparing the responses by discipline. These study results should be very helpful in evaluating introductory accounting courses during program assessment.

INTRODUCTION

This paper reports on a research project in the area of accounting education. Business faculty members at three colleges/universities were surveyed for their opinions about the essential accounting knowledge needed by business majors. This project was designed to provide necessary information for evaluating and developing curricula for principles of accounting courses in colleges and universities. Specifically, the objectives of the study are to:

- Identify a common body of accounting knowledge that is essential for business majors.
- Determine the level of knowledge perceived to be necessary for the various topics in the common body.
- Compare the perceptions of business faculty members by discipline.

The following sections present the background and related literature review the research methods used for this study, the study results, a discussion, and the conclusion.

BACKGROUND AND RELATED LITERATURE REVIEW

Accounting educators and practitioners have studied the state of accounting education for years. The Bedford Committee in the mid-1980s called for a complete reorientation. The eight largest public accounting firms claimed in 1989 that accounting education was not up-to-date. In 1992, The Accounting Education Change Commission called for a major evaluation of content and teaching methods for the introductory accounting courses. Continuing this theme in 2001, Albrecht and Sack suggested major changes to the course content, curricula, pedagogy, technology, faculty development and reward systems, and strategic direction of accounting education. In many reports, the introductory courses have been the primary focus and concern. Today, the goals for the introductory accounting courses have not changed. Most faculty members would agree that business majors are to learn about accounting as it supports business decision making. Many authors have made substantive recommendations for improving the introductory accounting courses.

The Bedford Committee Report

In the mid-1980s, the Bedford Committee of the American Accounting Association (AAA) assessed the state of accounting education (AAA, 1986). The committee's analysis indicated that accounting education would require major reorientation by the year 2000. The report stated that massive changes had taken place in the business environment—particularly in technology and social values. However, at the same time, academic institutions had failed to evolve as rapidly as business practice. As a result ". . . a complete reorientation of accounting education is needed" (pp. 171-172).

Big Eight Firms' White Paper

In 1989, the chief executives of the eight largest public accounting firms presented their position on education for the accounting profession. The theme was the same as stated by the Bedford Committee: although the business environment had changed in dramatic ways, accounting education had not kept up-to-date. Curricular change was mandatory for accounting degree programs and for the introductory accounting courses as well (Kullberg et al., 1989, p. 1).

Accounting Education Change Commission Position Statement (AECC) No. Two

The Accounting Education Change Commission (AECC) was appointed in 1989 by the American Accounting Association (AAA). The primary objective of the AECC was to be a catalyst for improving the academic preparation of accountants. The AECC stated that the primary objective of the introductory courses in accounting is "for students to learn about accounting as an information development and communication function that supports economic decision-making" (AECC, 1992, p. 2). Note that this objective reflects a user rather than a preparer perspective. This primary objective of the introductory sequence was in sharp contrast with the long-held objective which has been to teach bookkeeping essentials to accounting majors. In traditional curricula, the introductory courses are viewed as the first courses in accounting (for accounting majors) rather than the only (and last) courses in accounting for business majors (Baldwin & Ingram, 1991, pp. 3-4).

Albrecht and Sack

To determine the problems that faced accounting education, The AAA, the Institute of Management Accountants (IMA), the American Institute of Certified Public Accountants (AICPA), and the Big Five public accounting firms sponsored a study on the future of accounting education. Albrecht and Sack (2001) were the researchers for this study. The researchers observed three major developments in the business environment: technology, globalization, and investor power in the capital markets. It was the opinion of the researchers that these developments have not been systematically integrated into accounting education. As a result, accounting education was outdated and in need of significant modification.

Albrecht and Sack (2001) described the three major developments in the business world and the changes caused by these three factors. Technology has made the preparation of financial information quick, easy and cheap. However, educators still focus on the preparation of financial information rather than on its use. Globalization has altered business operations and the accounting role while firms face competition from the entire world. In addition, investor power in the capital markets has forced management to respond quickly to information demands.

Schools that stayed with their traditional educational model for accounting, have found that some students are bypassing the accounting major for more highly paid areas such as information systems (IS), finance, logistics, e-commerce, and strategy. The traditional model for accounting education may have lost its appeal for business students. Some students even find the introductory accounting classes are "boring." Albrecht and Sack (2001) suggested substantive changes to the accounting educational model in the following areas: course content and curricula, pedagogy, technology, faculty development and reward systems, and strategic direction. The authors warn that if accounting education fails to keep pace with changes in the business environment, it may undermine accounting as a discipline.

Other Recommendations

More recently, a number of other recommendations have been made to modify the introductory accounting principles courses. Some of the recommended modifications are provided in the following areas: (a) course content and curricula, (b) pedagogy, and (c) essential skills.

Course Content and curricula.

One specific recommendation made by the AECC was to overhaul the content of introductory accounting to be a broad introduction to accounting taught from the user's perspective (1992). The traditional curriculum of the first two courses in accounting emphasizes the rote memorization of accounting pronouncements and the mechanics of recording transactions—taught from the preparer's perspective. Diller-Haas (2004) suggests that this does not provide a complete picture of how to use accounting information in today's business environment and provides students with a distorted view that may discourage them from majoring in accounting. In addition, this focus on memorization of technical knowledge precludes a focus on helping students to learn to think and to be creative.

Today, the majority of students in the introductory accounting classes are nonaccounting majors. The preparer approach with its focus on debits and credits and accounting procedures may be particularly ineffective in classes where the majority of the students will not major in accounting. The students in introductory accounting are better served by learning how to use financial statements and financial data rather than focusing on the debits and credits needed to prepare these statements (Diller-Haas, 2004; AlHashim & Weiss, 2004). Force (2002) reported that some schools had taken significant steps by changing the intro course to have a user focus and have moved much of the technical material into a separate course.

Pedagogy

In addition to calls for change in the content and curricula for introductory accounting, there have been suggestions to address the "how to teach accounting." Members of the accounting profession have encouraged increased student involvement in the learning process and Saunders and Christopher (2003) summarize some of the nontraditional teaching models for the accounting principles courses:

- The student should be an active participant in learning,
- The student should be taught and should learn to solve unstructured problems,
- The student should learn by doing,
- Students should be encouraged to work in groups or teams,

- The creative use of technology is essential,
- The student may be required to complete computer assignments or simulations.

There is evidence that students do not see much value from the first accounting course (Chen, Jones, & McIntyre, 2004). Turner, Lesseig, and Fulmer (2006) experimented with a motivational tool in the first accounting course. The authors related the introductory accounting material to the student's concentration of study. Quantitative results and anecdotal evidence suggest that tying accounting concepts to career applications can be successful in the intro classes.

Brickner and Etter (2008) have used several strategies to create an active learning environment in principles of accounting. The in-class strategies include guided notes, a "pause procedure," mini-quizzes, think-pair-share, and a "minute paper." Out-of-class strategies include attendance at business meetings, article summaries, and review of a corporate annual report. Edmond and Tiggeman (2009) also report on ways to incorporate collaborative learning into accounting classes. The suggestions represent a departure from the traditional lecture method of teaching and require the student to interact with other students and with the material.

Essential skills

In responding to the repeated calls for change in accounting education, Hurt (2007) has responded with a suggestion for the design of an undergraduate core that has an emphasis on fundamental skills rather than the technical focus of so many programs. He lists four essential abilities: writing, critical thinking, professionalism and ethics, and information technology. Writing assignments should include business writing such as memos, letters, analyses, and reports (Hirsch, Anderson, & Gabriel, 1998). Critical thinking skills should be developed over time and Hurt (2007) suggests a model by Wolcott and Lynch (2002). Bell (2004) has suggested seven characteristics of a professional: (a) communicates effectively; (b) thinks rationally and logically; (c) appropriately uses technical knowledge; (d) integrates knowledge from many disciplines; (e) exhibits ethical, professional behavior; (f) recognizes the influence of political, social, economic, legal, and regulatory forces; and (g) seeks additional knowledge. In the area of information technology, students should have competence in basic personal productivity software (word processing, spreadsheets, and presentation graphics).

The AICPA (2008) has a critical list of personal competencies that should be developed in accounting students: (a) professional demeanor, (b) problem solving and decision making, (c) interaction, (d) leadership, (e) communication, (f) project management, and (g) technological adaptability. Although this skill list is promoted by the AICPA for accounting professionals, it should be a guide for all business students.

Haas (2005) has defined the goals of ethics education: to create an awareness of ethical dilemmas and providing methods of resolution. Ethics education is an important part of

accounting education and David and Wirtz (2010) suggest that accounting educators take the opportunity to build the ethical decision making skills of the business students who take our classes—including the introductory accounting classes. Thomas (2004) provides a detailed bibliography of materials for use in accounting classes. Most accounting tests today provide an expanded level of ethics coverage making it easier to introduce ethical issues. By reviewing ethical issues, the nonaccounting business students will be introduced to the higher expectations in the field of accounting and this will help them to build their ethical decision making skills.

RESEARCH METHODS

Research Question

Faculty members should evaluate their introductory accounting courses on an ongoing basis—as part of program assessment. The question is whether or not these introductory accounting courses are meeting the challenges of the changing business environment. Faculty members must determine what topics to include and what level of coverage is appropriate for each topic. In addition, the opinions of experts in disciplines other than accounting should be considered in redesigning the accounting principles courses to be more useful to business majors in general.

This project was designed to obtain the opinions of business faculty about the accounting knowledge needed by business graduates. Faculty members were asked about both the topical areas and the appropriate level of knowledge for each topic.

Faculty Data Collection

A questionnaire was designed for this study. The set of accounting topics included in the questionnaire was compiled from a review of current accounting principles textbooks. The questionnaire included 131 items for evaluation. The items were grouped by the general classifications as shown in Table 1.

Table 1: Questionnaire Topic Classifications
1. Introduction to Accounting and Business
2. Analyzing Transactions
3. The Adjusting Process
4. Completing the Accounting Cycle
5. Accounting for Merchandising Businesses
6. Inventories

Table 1: Questionnaire Topic Classifications
7. Sarbanes-Oxley, Internal Control, and Cash
8. Receivables
9. Fixed Assets and Intangible Assets
10. Current Liabilities and Payroll
11. Corporations: Organization, Stock Transactions, and Dividends
12. Long-term Liabilities, Bonds, and Notes
13. Investments and Fair Value Accounting
14. Statement of Cash Flows
15. Financial Statement Analysis
16. Managerial Accounting Concepts and Principles
17. Job Order Accounting
18. Process Cost Systems
19. Cost Behavior and Cost-Volume-Profit Analysis
20. Variable Costing for Management
21. Budgeting
22. Performance Evaluation Using Variances from Standard Costs
23. Performance Evaluation for Decentralized Operations
24. Differential Analysis and Product Pricing
25. Capital Investment Analysis
26. Cost Allocation and Activity-Based Costing
27. Cost Management for Just-in-Time Environments
28. International Financial Reporting Standards

Respondents were asked to indicate their opinion of the level of knowledge for each topic that business graduates should have. The following rating scale was provided:

1 = none
2 = recall or awareness of topic
3 = general knowledge of basics of topic
4 = ability to use and apply details of topic
5 = ability to prepare journal entries for topic

Faculty Subjects

The survey population for the faculty study consisted of three groups: (1) business faculty in the School of Business at Clark Atlanta University, (2) business faculty in the School of Business at Howard University, and (3) business faculty in the Division of Business and Economics at Morehouse College. Questionnaires were sent to 30 faculty members at Clark Atlanta University, 66 faculty members at Howard University, and 32 faculty members at Morehouse. Usable responses were received from 61 faculty members for an overall response rate of 47.7 percent.

RESULTS

Overall Topic Means

Means and standard deviations for each questionnaire topic were calculated for each faculty group (1 = Clark Atlanta, 2 = Howard University, and 3 = Morehouse). Analysis of Variance confirmed that for each questionnaire topic classification, there were no significant differences in pairwise comparisons of responses from Clark Atlanta University, Howard University, and Morehouse College. This means that the three groups (schools) did rate the 131 inventory items similarly. In addition, since there were no significant differences across the schools, overall means and standard deviations were calculated with all responses from the three schools combined. The questionnaire rating scale reflected the respondent's perception of the level of knowledge for each topic that business graduates should have upon graduation. This was noted: (1) = none, (2) = recall or awareness of topic, (3) = general knowledge of basics of topic, (4) = ability to use and apply details of topic, and (5) = ability to prepare journal entries for topic.

See Table 2: Overall Means for Topic Classifications in Descending Order. The respondents' perceptions of the level of knowledge required for business graduates ranged from a high of 3.607 (Introduction to Accounting and Business) to a low of 2.578 (Differential Analysis and Product Pricing). As shown in Table 2, the top five topic classifications were: (1) Introduction to Accounting and Business (3.607), (4) Completing the Accounting Cycle (3.561), (2) Analyzing Transactions (3.559), (15) Financial Statement Analysis (3.444), and (12) Long-Term Liabilities, Bonds, and Notes (3.208). Again, shown in Table 2, the five topics with the lowest scores were: (27) Cost Management for Just-in-Time Environments (2.688), (26) Cost Allocation and Activity-Based Costing (2.633), (22) Performance Evaluation using Variances from Standard Costs (2.613), (23) Performance Evaluation for Decentralized Operations (2.606), and (24) Differential Analysis and Product Pricing (2.578).

Table 2: Overall Means for Topic Classifications in Descending Order			
Topic No.	Topic Classification	Overall Mean	Financial (F) Managerial (M)
1.	Introduction to Accounting and Business	3.607	F
4.	Completing the Accounting Cycle	3.561	F
2.	Analyzing Transactions	3.559	F
15.	Financial Statement Analysis	3.444	F
12.	Long-Term Liabilities, Bonds and Notes	3.208	F
9.	Fixed Assets and Intangible Assets	3.186	F
14.	Statement of Cash Flows	3.173	F
10.	Current Liabilities and Payroll	3.126	F
5.	Accounting for Merchandising Businesses	3.124	F
21.	Budgeting	3.124	M
6.	Inventories	3.123	F
16.	Managerial Accounting Concepts and Principles	3.112	M
25.	Capital Investment Analysis	3.101	**F**
11.	Corporations: Organization, Stock Transactions, and Dividends	3.062	F
3.	The Adjusting Process	3.014	F
13.	Investments and Fair Value Accounting	3.006	F
8.	Receivables	2.930	F
19.	Cost Behavior and Cost-Volume-Profit Analysis	2.885	M
7.	Sarbanes-Oxley, Internal Control, and Cash	2.881	F
17.	Job Order Accounting	2.812	M
18.	Process Cost Systems	2.778	M
28.	International Financial Reporting Standards	2.778	F
20.	Variable Costing for Management	2.744	M
27.	Cost Management for Just-in-Time Environments	2.688	M
26.	Cost Allocation and Activity-Based Costing	2.633	M
22.	Performance Evaluation Using Variances from Standard Costs	2.613	M
23.	Performance Evaluation for Decentralized Operations	2.606	M
24.	Differential Analysis and Product Pricing	2.578	M

Pairwise Comparisons

The Scheffe pairwise comparison method was used to compare the means of all independent variables (topic classifications) on the basis of two factors. One factor was school (1 = Clark Atlanta University, 2 = Howard University, and 3 = Morehouse College). The second factor was discipline (1 = accounting, 2 = economics, 3 = finance, 4 = management, and 5 = marketing). The pairwise comparisons on the basis of the school factor indicated no significant mean differences. The pairwise comparisons on the basis of discipline did indicate a number of significant mean differences. The Scheffe test was used because it provides protection from Type 1 errors and it requires a larger sample mean difference before it concludes that a difference is significant (Gravetter & Wallnau, 2004).

Accounting vs. Economics

See Table 3. For the pairwise comparisons of responses for accounting and economics, there was only one (1) significant mean difference of the 28 topic classifications (3.57%). This significant difference was for: (7) Sarbanes-Oxley, Internal Control, and Cash ($p < 0.05$).

Table 3: Accounting vs. Economics: Significant Mean Differences between Paired Groups

Topic No.	Topic Classification	Mean Difference	Standard Error	Significance Value	Significance
7.	Sarbanes-Oxley, Internal Control, and Cash	1.37393	.415451	.044	*

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Accounting vs. Finance

For the pairwise comparisons of responses for accounting and finance, there were no significant mean differences of the 28 topic classifications (0.0%) at $p < 0.05$.

Accounting vs. Management

See Table 4. For the comparison of responses for accounting and management, there were significant mean differences for 8 of the 28 topic classifications (28.57%) at $p < 0.05$. These significant mean differences were for the following topic classifications: (1) Introduction to Accounting and Business ($p < 0.05$), (3) The Adjusting Process ($p < 0.01$), (5) Accounting for Merchandising Businesses ($p < 0.01$), (8) Receivables ($p < 0.01$), (9) Fixed Assets and Intangible

Assets ($p < 0.05$), (11) Corporations: Organization, Stocks, and Dividends ($p < 0.01$), (15) Financial Statement Analysis ($p < 0.05$), and (19) Cost Behavior and Cost-Volume-Profit Analysis ($p < 0.05$).

Table 4: Accounting vs. Management: Significant Mean Differences between Paired Groups

Topic No.	Topic Classification	Mean Difference	Standard Error	Significance Value	Significance
1.	Introduction to Accounting and Business	1.09615	.325700	.037	*
3.	The Adjusting Process	1.96154	.427040	.002	**
5.	Accounting for Merchandising Businesses	1.27692	.318060	.008	**
8.	Receivables	1.59722	.352327	.002	**
9.	Fixed Assets and Intangible Assets	1.17483	.335441	.028	*
11.	Corporations: Organization, Stocks/Dividends	1.54487	.354919	.003	**
15.	Financial Statement Analysis	1.16186	.334807	.030	*
19.	Cost Behavior and Cost-Volume-Profit Analysis	1.32634	.393294	.038	*

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Accounting vs. Marketing

See Table 5. For the comparison of responses for accounting and marketing, there was only one (1) significant mean difference of the 28 topic classifications (3.57%) at $p < 0.05$. This significant mean difference was for (11) Corporations: Organization, Stocks, and Dividends ($p < 0.01$).

Table 5: Accounting vs. Marketing: Significant Mean Differences between Paired Groups

Topic No.	Topic Classification	Mean Difference	Standard Error	Significance Value	Significance
11.	Corporations: Organization , Stocks/Dividends	1.59117	.384450	.006	**

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Management vs. Marketing

For the pairwise comparisons of responses for management and marketing, there were no significant mean differences of the 28 topic classifications (0.0%) at $p < 0.05$.

Discipline Disagreement

See Table 6. This table provides a recap of the pairwise comparisons that indicate significant mean differences on the topic classifications: Accounting vs. Economics (1), Accounting vs. Finance (0), Accounting vs. Management (8), Accounting vs. Marketing (1), and Management vs. Marketing (0).

Table 6: Significant Mean Differences across Disciplines for each Topic Classification

Topic No.	Accounting/ Economics	Accounting/ Finance	Accounting/ Management	Accounting Marketing	Management/ Marketing
1. Introduction to Accounting and Business			*		
3. Adjusting Process			**		
5.Accounting for Merchandising Businesses			**		
7. Sarbanes-Oxley, Internal Control, Cash	*				
8. Receivables			**		
9. Fixed and Intangible Assets			*		
11. Corporations: Organization, Stock Transactions, and Dividends			**	**	
15. Financial Statement Analysis			*		
19. Cost Behavior and CVP			*		

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Discipline Agreement

For the pairwise comparisons of all disciplines (accounting, economics, finance, management, and marketing), there were 19 of the 28 topic classifications where the results indicated that there were no significant mean differences. See Table 7.

Table 7: Topics with no Significant Differences among Disciplines (at $p < 0.05$)	
2.	Analyzing Transactions
4.	Completing the Accounting Cycle
6.	Inventories
10.	Current Liabilities and Payroll
12.	Long-Term Liabilities, Bonds, and Notes
13.	Investments and Fair Value Accounting
14.	Statement of Cash Flows
16.	Managerial Accounting Concepts and Principles
17.	Job-Order Accounting
18.	Process Cost Systems
20.	Variable Costing for Management
21.	Budgeting
22.	Performance Evaluation Using Variances from Standard Costs
23.	Performance Evaluation for Decentralized Operations
24.	Differential Analysis and Product Pricing
25.	Capital Investment Analysis
26.	Cost Allocation and Activity-Based Costing
27.	Cost Management for Just-in-Time Environments
28.	International Financial Reporting Standards

DISCUSSION

The study indicates that across these three schools, we do have agreement on a common body of knowledge for the introductory accounting courses. The highest overall mean of 3.607 was for 'Introduction to Accounting and Business.' The lowest overall mean of 2.578 was for 'Differential Analysis and Product Pricing.' This means that all 28 topic classifications received a mean score in the range of 2.578 to 3.607. No topic classification was identified as one that

should not be covered in the courses (i.e. having a mean of 1.0). No topic classification was identified as one that should be covered to prepare students to use and apply details of the topic (i.e. having a mean of 4.0). No topic classification was identified as one that should be covered at the level of teaching the students to prepare journal entries (i.e. having a mean of 5.0).

Again, this study indicates that all 28 topic classifications should be taught so that students: (1) would be able to recall or have an awareness of the topic (12 of the 28 topics or 42.9 percent) or (2) would be able to have a general knowledge of the basics of the topic (16 of the 28 topics or 57.1 percent). This study finding is in line with the Position Statement No. 2 as reported by the AECC in 1992. That is, that the primary objective of the introductory courses is not to teach bookkeeping essentials to accounting majors. Rather, the primary objective is to have students (all business students) learn about accounting as an information communication function to support economic decision-making (AECC, 1992). These study results should be helpful to accounting faculty as they evaluate the introductory courses to make curricula changes so as to meet the needs of accounting, economics, finance, management, and marketing majors.

The good news is that the study results indicate close agreement in the responses of the faculty members for accounting, economics, finance, and marketing. There is general agreement on the common body of knowledge and on the level of knowledge required by majors regarding the topic classifications.

The "not-so-good" news is that the study results also indicate a significant area of disagreement among the faculty members of accounting and management. The pairwise comparisons of responses for accounting and management faculties indicate significantly different means (for the level of knowledge) for 8 of the 28 topic classifications (28.57%). This is in stark contrast with the pairwise comparison for accounting and all other disciplines—where there is general agreement. These significant differences in the perceptions of the levels of knowledge required for the topic classifications as reported by the management faculty members, warrants further investigation.

To be successful in the world of business, members of management must focus on certain broad, critical factors. Moore (1986) describes these factors as: personal, sociological, organizational, and environmental. Although these factors are broad, it can be shown that knowledge of how accounting can be used to make decisions can be very helpful in managing an enterprise.

Personal factors include control, values, education, experience, leadership, and vision. The introductory accounting topics may influence experience where the manager is responsible for budgeting and may be accountable for profitability. Sociological factors include networks, teams and role models. The introductory accounting topics rarely intersect with this factor. The organizational factors include such items as strategy, structure, culture, and product/services. The introductory accounting topics may impact the area of product/services where the manager needs cost and pricing information. The environmental factors include: competitors, resources, government policy, customers, suppliers, investors, and creditors. Looking at resources,

accounting may be of significant help in keeping overhead low, productivity high, and capital investment low. In reviewing customer histories, again, profitability is a significant indicator as well as the level of accounts receivable. In reviewing supplier histories, keeping the cost of resources (or cost of goods sold) at a competitive level is significant to maintain profitability. In dealing with investors and creditors, it is important for the manager to understand the long-term liabilities of the organization and also the equity section of the balance sheet. An understanding of the relationship of the balance sheet items and the income statement revenues and expenses provides an invaluable tool for financial statement analysis.

It may be that the scope of work in the field of management is very broad while that of accounting may be narrower. This difference in discipline focus may explain a part of the area of disagreement between the faculty members of accounting and management. However, one should not imply from the results of this study, that eight of the 28 topics covered in the introductory accounting course should be covered at a lesser degree for business majors on the basis of the responses from management faculty members. One can make a strong argument to include the following topics for the benefit of all business majors, including the management majors: (1) Introduction to Accounting and Business, (3) Adjusting Process, (5) Merchandising, (8) Receivables, (9) Fixed and Intangible Assets, (11) Corporations, (15) Financial Statement Analysis, and (19) Cost Behavior.

CONCLUSION

The results of this study provide interesting information that can impact how we choose to teach our introductory accounting classes. Results suggest: (1) no discipline group wants business majors to do bookkeeping (have the ability to prepare journal entries (level 5); (2) the overall mean responses suggest that no topics should be taught for students to have the ability to use and apply details of the topic (level 4); and (3) the overall mean responses suggest that all topics should be taught to achieve recall (level 2) or to acquire general knowledge of basics of topics (level 3).

Future research in this area of introductory accounting might include expanding this study to include responses from: faculty at additional colleges/universities, the business community, and current business students. In addition, the lack of agreement between accounting and management faculty members on the level of required knowledge for the introductory topic classifications calls for further investigation.

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AN EMPIRICAL STUDY OF GENDER ISSUES IN ASSESSMENTS USING PEER AND SELF EVALUATIONS

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ABSTRACT

The increase in the use of teaching and learning strategies in which students learn with and from each other may result in an increase in the use of peer assessments. Student self and peer assessments may also be used to determine the allocation of a group's marks to individual students. However, one of the threats to the reliability of these peer assessments is gender bias. The primary purpose of this study is to test whether gender differences and gender bias exist in student assessments of individual contributions to collaborative projects. The data for this study includes 330 self assessments and 1592 peer assessments completed by 330 students in an undergraduate course. Previous literature has suggested that a multiple stage evaluation process may improve the validity of the assessment of efforts by individuals within a group. This study makes a unique contribution by examining gender issues in self and peer assessments where the evaluation data is not gathered from the first set of peer and self evaluations of group members. This study also extends prior work by examining peer assessment by including both a global measure of performance and measures of specific work behaviors. This research documents a difference in the global rating of performance by the gender of the student being evaluated. Females receive higher ratings by both male and female raters. This study provides a unique contribution to the literature on team evaluations by documenting consistency in the findings across overall ratings as well as individual ratings on specific criteria by gender. No gender bias was evident in either the overall ratings or the numerical ratings along specific performance factors. However, this study documents that raters who were of the same gender as ratees provided more open-ended feedback that contained both positive and negative comments (mixed feedback) for a particular performance dimension than did raters who were of the opposite gender. Further, this research finds that females receive and give more open-ended feedback than male students, and this feedback tends to be positive. However, on evaluations of specific work behaviors, female students tend to be less generous than males when numerically rating the extent to which a team member did his/her fair share of the team's work. Even though females are rated higher by both genders in the peer evaluations, we find no gender difference in the self-assessment ratings.

Keywords

Gender issues, peer evaluation, self evaluation, group work, team evaluation, assessment

INTRODUCTION

Traditionally, instructors unilaterally assess students' performance. However, increasing use of teaching and learning strategies in which students learn with and from each other may lead to increasing reliance on peer assessments. To this point, the authors of one study believe that peer assessments may replace most of the grading traditionally performed by instructors (Henderson, Rada, and Chen, 1997).

When students conduct peer assessments in collaborative learning environments, they have an opportunity to discuss and analyze each other's performance. Oftentimes instructors cannot observe first-hand the contributions of each group member to a collaborative project work, but peer and self assessments can provide a means by which group marks are allocated among the members of a group based on their relative contributions. However, moving students into the realm of grading raises questions about the validity of those marks and whether the gender of the raters and ratees affect the marks given and received (Ghorpade and Lackritz, 2001; Falchikov and Magin, 1997; Sherrard, Raafat, and Weaver, 1994).

Where actual differences in performance exist between male and female students, evaluations may validly capture those differences because they affect the nature of the contribution that a group member may make to the collaborative learning experience. Within medical education, several studies found that women were more skilled at eliciting concerns from patients and were more empathetic in consultations (Bean and Kidder, 1982; Marteau et al., 1991, Wasserman et al., 1984; Weisman and Teitlbaum, 1985).

Other literature suggests that women tend to be more open to other perspectives and incorporate the perspectives of others with their own, whereas men tend to focus more on their *own* perspective (Baxter Malgoda, 1992; Belenky et al., 1986). These gender characteristics might suggest that cooperative learning projects could be more appealing to female students as compared to male students. If a preference for this type of learning leads female students to have more enthusiasm about the collaborative activities, female students may contribute more to the group effort on average as compared to the male students.

Other variables may also affect the ratings given to male and female peers. Research pertaining to gender communication patterns in higher education suggests that males may receive more attention in classes than females by dominating classroom discussions (Simonds and Cooper, 2001; Brazelton, 1998; Kramarae and Treichler, 1990). This could give rise to a "halo effect" (Cascio, 1998), whereby the raters knowledge of the ratee's achievement on one dimension (classroom participation) influences performance ratings in another area. This could lead to male students receiving higher peer ratings on average than female students, regardless of

the gender of the rater. Based on these studies, we raise our first research question, are there gender differences in peer assessments of team members?

Some researchers report evidence that teachers devalued the performance of students who are the same gender as the instructor relative to the performance of students who are the opposite gender from the instructor (O'Neill, 1985). Another study found that women in a class gave student group presentations higher ratings than the men did (Sherrard, Raafat, and Weaver 1994). The authors also posit that women may have higher empathy for their peers than men do and that this could be a reason for the disparity in the peer assessments.

Where peer assessments affect a significant proportion of the total marks for a course, we believe it is valuable to conduct analyses to detect whether gender bias exists in students' peer assessments. Only one study, to our knowledge, employs a cross-gender/same-gender analysis of peer assessments by comparing two sets of ratings (one from same gender and one from opposite gender) on the same students to determine whether significant differences exist in student peer assessments (Falchikov and Magin, 1997). Where Falchikov and Magin (1997) used data from groups that performed an assessment of their group members just once during the term, our study uses data from the third assessment performed by the groups during a term. Some literature suggests that the reliability of scoring improves if students assess each other at multiple stages rather than simply at the end of a project (Bacon, Stewart, and Silver, 1999).

Falchikov and Magin (1997) examined two cases. One case was a first-year science and technology course where students were assigned to projects on the basis of the topics those students selected. The other case involved data from a first-year graduate medical course on clinical and behavioral studies where students were placed in tutorial groups that lead to the production and presentation of a group report. Neither case resulted in evidence of gender bias, but further research seems warranted since peer assessments may be sensitive to the context in which they are performed. This leads us to our second research question, is there gender bias in peer assessments?

In a study that examined self assessment, Sherrard, Raafat, and Weaver (1994) found that self-assessment scores for group presentations were approximately 4.5% higher than the peer assessment scores of those same presentations. However, the study did not indicate whether or not gender differences existed in the self-assessment scores. When student self assessments are included as factors in determining the allocation of a group's marks to individual students, educators may also want to implement checks to identify gender differences in self assessments. Thus, we pose our third research question, are there gender differences in self assessment?

When evaluating our three research questions, we looked at both a global measure of performance and six specific work behaviors. While it may be difficult for us to know the exact nature of the reasons for gender differences that may exist in the peer or self assessments performed by our students, these tests may allow us to identify some of the attributes that affect the differences, if any, in the overall performance ratings.

METHODOLOGY

Sample

The data for this study came from the third set of self and peer assessments completed by students enrolled in a required, introductory, cross-disciplinary business course. The course was team taught and used a business simulation game as the primary pedagogical tool to engage students in making business decisions for their group's company. Six professors (three male and three female) taught in the course. The course consisted of three modules: accounting, marketing, and management. So each student saw three of the course professors during the semester. Every student saw at least one male professor and at least one female professor during the first term of the course.

There were 12 sections of the course, and each section had 5 student groups (with 4 to 7 members in each group), resulting in 60 teams or groups. However, only 59 teams completed the self and peer assessments in the third round of evaluations. In addition to completing a self-assessment, each student also completed an assessment for each of their group members. Three hundred thirty students completed this final set of evaluations resulting in 330 self assessments and 1592 peer assessments (for a total of 1602 evaluations). Of the 330 respondents, 120 were female and 210 were male. Each group contained both male and female students.

The course was required for all business majors in the first semester of their freshman year. Transfer students were generally waived out of the course. Of the students included in the sample, 89.5 percent were freshmen, 8.7 percent were sophomores, and 1.9 percent were juniors. When classified by major, the largest group of students was business undecided (35.3 percent). Of the remainder, 16.8 percent were management/entrepreneurship majors, 15.0 percent were marketing/advertising majors, 8.0 percent were computer information systems majors, 7.4 percent were accounting majors, 6.5 percent were finance majors, 6.2 were international business majors, and the remaining 5.6 percent were other majors.

Data Collection

Each of the three modules contained at least one group project. Overall, these projects accounted for 31.25% of the course grade. In the accounting module, each group created a balanced scorecard strategy map for its firm in the simulation and analyzed the firm's performance in an oral presentation to the class. In the marketing module, each group designed a marketing plan for its simulation firm and presented that plan to the class. In the management module, each group designed a strategic plan and presented it to the class.

At the end of each module (three different points during the term), students completed a peer evaluation packet. The packet consisted of a cover sheet (Exhibit 1) that offered instructions on how to complete the packet and explained that the evaluations would be anonymously shared

with their group members. The second page of the peer evaluation packet was an illustration of a completed feedback grid (Exhibit 2). Subsequent pages in the packet contained blank feedback grids so that the rater could complete one for each member of the team including himself/herself. The instructors of the course designed the assessment criteria based on conversations with students from the prior year about desirable or undesirable behaviors associated with team members.

Each student completed his/her evaluation packet outside of classroom hours. Each student placed his/her evaluation packet in a sealed envelope, wrote his/her name, the course section, and the name of the team on the outside of the envelope, and gave that envelope to the module instructor after the completion of the group project and presentation. After receiving the packet, instructors and a graduate assistant verified that the correct total number of points (equal to the number of team members times 100) was distributed among all team members, that the rating given to an individual on the cover sheet matched the rating given to that same student on the comment/feedback grid, and then re-assembled these evaluations so that a student would receive his/her cover sheet and the feedback grids that each of his/her teammates completed to evaluate him/her as well as the grid that he/she completed to rate himself/herself. The average of those scores for that individual appeared on the bottom of the cover sheet. This average was used as a weight to determine the individual's grade on the group work. If a group earned a 90 on its project and a particular student in that group received an evaluation from peers and self of 90 points, then that individual received an 81 as a grade on the project. In some cases, students received grades in excess of 100 points.

ANALYSIS

Table 1 offers a matrix with the average ratings received in peer assessments by gender of the rater. The top left group shows 100.36 as the average rating received by female students from female raters (F X Fr). In the next row, 100.49 is the average rating received by female students from male raters (F X Mr). The bottom left score of 100.44 is the average rating given to female students by all peer team members regardless of gender. The mean rating received by females from other females was not significantly different from the mean rating they received from males (t=-0.222, p=.825). The middle column shows that male students received a mean rating of 98.41 from females and 99.05 from males with a mean score of 98.83 from all peers. Again, the mean rating received by males from females was not statistically significant from the mean rating males received from males (t=-0.888, p=.359).

The gender difference in the average performance ratings of 1.61 points favoring female students, when comparing X_F to X_M, was statistically significant (t=3.577, p=.000). However, examination of the two diagonals of Table 1 reveals a lack of gender bias in the rating behavior of the students. The average rating received by students from raters who were of the opposite gender was 99.44. The average rating received by students from raters who were of the same

gender was 99.38. The point difference of 0.06 was not statistically significant (t=-0.140, p=.889).

Table 1. Comparison of Peer Assessment Ratings of Overall Performance by Gender.		
F X Fr = 100.36 (n=225)	M X Fr = 98.41 (n= 347)	Xopp_gender = 99.44 (n=690)
F X Mr = 100.49 (n=343)	M X Mr = 99.05 (n=677)	Xsame_gender =99.38 [b] (n=902)
XF = 100.44 (n=568)	XM = 98.83 [a] (n=1024)	

[a] T-test for mean difference of 1.61 between XF and XM is 3.577 (*p*=.000).
[b] T-test for mean difference of 0.06 between Xopp_gender and Xsame_gender is -0.140 (*p*=.889).

F = female student evaluated; M = male student evaluated; Fr = female rater; Mr = male rater;
XF = average rating given to female students by any peer rater; XM = average rating given to male students by any peer rater; Xopp_gender = average evaluation received from a student by a peer rater of the opposite gender; Xsame_gender = average evaluation received from a student by a peer rater of the same gender.

The evaluation forms also prompted raters to consider a list of individual work behaviors, such as promptly attending meetings, delivering work in complete fashion, meeting deadlines, volunteering for tasks, pulling fair share, and demonstrating a positive and enthusiastic attitude. Raters marked each of these criteria between 1 (never) and 5 (always) and some provided open-ended feedback on each dimension. Although scores on these individual performance criteria did not enter into the grading process, raters may have considered these marks in determining the overall performance ratings given to their team members. Table 2 indicates that gender differences existed along each of the individual evaluation criteria that appeared on the evaluation forms. Females received higher evaluations than males. When grouped on whether or not the rater was the same gender as the person being evaluated, the ratings on these individual evaluation criteria are not significantly different. Thus, no gender bias was evident.

Table 2. Comparison of Individual Evaluation Criteria Grouped by Gender of the Person Evaluated.						
Evaluation Criteria	Gender of Person Evaluated	N	Mean	Std. Deviation	t	*p*-value
Prompt in attendance at team meetings	Female	564	4.78	0.562	3.411	.001
	Male	1006	4.67	0.784		
Delivered agreed upon parts of project in a complete fashion	Female	564	4.88	0.420	2.797	.005
	Male	1006	4.80	0.604		

Table 2. Comparison of Individual Evaluation Criteria Grouped by Gender of the Person Evaluated.						
Evaluation Criteria	Gender of Person Evaluated	N	Mean	Std. Deviation	t	*p*-value
Met deadlines	Female	563	4.92	0.384	2.501	.012
	Male	1007	4.86	0.518		
Volunteered appropriately during team meetings when tasks need to be accomplished	Female	564	4.79	0.539	2.023	.043
	Male	1006	4.73	0.680		
Pulled fair share with regard to overall workload	Female	563	4.83	0.506	3.430	.001
	Male	1007	4.72	0.704		
Showed enthusiastic and positive attitude about team activities and fellow team members	Female	563	4.83	0.522	2.452	.014
	Male	1003	4.76	0.646		

Since the evaluation forms also offered raters an opportunity to provide open-ended comments on each of the six individual criteria (that are listed in the left column of Table 2), we tested for gender differences in the nature of that feedback (positive, negative, or mixed) and the frequency of that feedback. If the open-ended remarks by the rater were "clearly positive," the authors coded the category as positive. If the remarks were "clearly negative," the authors coded the category as "negative." If the remarks included both positive and negative feedback or included feedback that was not clearly positive or negative, the authors coded the category as "mixed." Since the variable in Table 3 is a frequency count across six categories, the variable can range from zero to six. The first row of Table 3 shows that females received positive remarks in an average of 1.796 of the six categories, whereas males received positive feedback in an average of 1.523 of these six categories. The difference, favoring female students, is statistically significant (t=2.649, p=.008). However, differences in the frequency of negative feedback (t=-0.885, p=.376) or mixed feedback (t=-0.689, p=.491) were not statistically significant. The bottom row of Table 3 ignores the nature of the feedback and shows that females received feedback across a higher number of categories than male students evaluated by their peers. This difference was statistically different (t=2.335, p=.020).

Table 3: Frequency and Nature of Open-ended Feedback on Six Performance Criteria.						
	Gender of Person Evaluated	N	Mean	Std. Deviation	t	*p*-value
# categories with positive feedback	Female	568	1.796	2.014	2.649	.008
	Male	1021	1.523	1.880		
# categories with negative feedback	Female	568	0.180	0.617	-0.885	.376
	Male	1021	0.210	0.665		
# categories with mixed feedback	Female	568	0.111	0.436	-0.689	.491
	Male	1021	0.097	0.356		
Total # categories with feedback	Female	568	2.086	2.147	2.335	.020
	Male	1021	1.830	2.013		

When the data was grouped by whether the gender of the rater is the same or different than the gender of the evaluator, the results show that more mixed feedback is received when the rater is of the same gender. The mean frequency of mixed feedback was 0.120 for the same gender and 0.078 for the opposite gender (t=2.181 and p=.029). However, there was no evidence of gender bias in tests examining the frequency of positive, negative, or total feedback.

When the data was grouped by the gender of the rater, the results showed that females gave more total feedback (mean of 2.070 for female raters and 1.838 for male raters; t=2.152, p=.032) and females also gave more positive feedback than male raters (mean of 1.757 for female raters and 1.544 for male raters; t=2.103; p=.036). No statistical differences were found for mixed (t=-0.705, p=.481) or negative feedback (t=1.004, p=.316) by gender of the rater. When the ratings on individual performance criteria are grouped by the gender of the rater, the only statistically significant difference was for "pulled fair share with regard to overall workload." Females are less generous than males when numerically evaluating the extent to which their peers are doing their fair share (mean of 4.73 for female raters and 4.79 for male raters; t=-2.036, p=.042).

The overall performance ratings given by students when rating themselves (self assessment) ranged from 90 to 150. If a student wished to indicate that each person on the team contributed equally to the performance of the team, then a student would mark a 100 for each team member. Thus, a 90 indicates that the individual recognized that he/she contributed less than his/her "fair share" to the team's performance and a 150 indicates that the individual contributed far beyond what others did in the group. The mean self assessment score was 103.52. Since this is greater than 100, it indicates that individuals tended to think that they contributed a bit more than an equal share to the team. Table 4 presents the means and t-tests of the self assessments by gender. The mean rating that female students (103.80) gave themselves was not

significantly different from the mean rating that male students (103.37) gave themselves (t=0.480, p=.632). Similarly, there were no significant differences between genders for self assessments on the numerical ratings of any of the six individual criteria that appeared on the evaluation form.

Table 4. Comparison of Self Assessment Ratings Gender.

Evaluation Criteria	Gender	n	Mean	Std. Deviation	t	*p*-value
Overall Evaluation	Female	120	103.80	7.765	0.480	.632
	Male	210	103.37	7.968		
Prompt in attendance at team meetings	Female	105	4.86	0.352	0.811	.418
	Male	191	4.82	0.439		
Delivered agreed upon parts of project in a complete fashion	Female	105	4.94	0.233	-0.375	.708
	Male	191	4.95	0.212		
Met deadlines	Female	105	4.97	0.167	0.885	.377
	Male	191	4.95	0.246		
Volunteered appropriately during team meetings when tasks need to be accomplished	Female	105	4.91	0.281	0.256	.798
	Male	190	4.91	0.294		
Pulled fair share with regard to overall workload	Female	105	4.91	0.281	-0.503	.615
	Male	189	4.93	0.274		
Showed enthusiastic and positive attitude about team activities and fellow team members	Female	105	4.87	0.369	-0.264	.792
	Male	189	4.88	0.359		

DISCUSSION AND CONCLUSIONS

Most students tend to rate themselves as doing slightly more than an equal share of the work. One is reminded of Garrison Keillor's description of Lake Wobegon, where "all the children are above average." However, since we required that each student allocate marks among team members and his- or herself so that the sum of the allocated marks equaled the team size times 100, students are unable to rate all peers above average.

Gender differences are apparent in our data for peer assessments. On average, females scored higher than males, regardless of the gender of the person performing the evaluation. This suggests that there are actual differences in performance between male and female students when

working on group projects. This performance difference was captured not only in the overall performance rating received, but also in the ratings for the specific performance criteria of promptly attending meetings, delivering work in complete fashion, meeting deadlines, volunteering for tasks, pulling fair share, and demonstrating a positive and enthusiastic attitude.

Since no statistically significant difference was found between the average numerical rating where the rater was the same gender as the person being evaluated and the average rating where the rater was of the opposite gender from the person being evaluated, there was no evidence of gender bias. This is reassuring in light of the prior research that reported evidence that teachers devalued the performance of students who are the same gender as the instructor relative to the performance of students who are the opposite gender from the instructor (O'Neill, 1985). We did not observe this among the students in this study.

The lack of gender bias in our data could be due in part to the way the groups and the evaluation process were managed. The composition of the teams did not change over the semester (except where students may have dropped out of the course), and the data was drawn from the third set of evaluations. By this point, students were more familiar with group expectations, characteristics of team members and their contributions, as well as the evaluation process itself (since the evaluation form itself never changed during the semester). Some have suggested that reliability in scoring increases when evaluations take place at multiple stages rather than simply at the end of the semester. Previous research has found that free-riding (social loafing) is reduced in multiple stage evaluations (Brooks and Ammons, 2003). Prior empirical studies on peer assessment examined gender only where the evaluation was the first (and last) of the semester. This study is the first to examine gender issues in self and peer assessments where the evaluation data is from a subsequent stage. So it would have been interesting to test whether any gender bias was evident in the first set of evaluations.

This is also the first empirical study of gender issues in peer assessments to examine not only an overall average rating received by peers, but also individual ratings on specific criteria, the frequency of qualitative feedback, and the nature (positive, negative, or mixed) of that feedback. While we find consistency between the performance difference by gender in the overall ratings and the ratings for six specific performance criteria, we also find that females tended to both *give* and *receive* more open-ended feedback than male students, and this feedback tended to be positive. The list of performance criteria and the opportunity to evaluate a group member both numerically and descriptively on those criteria may have helped students determine a fair overall allocation of the team's marks. Albert Einstein suggested, "Not everything that counts can be counted, and not everything that can be counted counts." By not forcing any formulaic relationship between these specific criteria and the overall rating, students were also allowed to consider other relevant factors that were not listed and to weight the factors in any way they deemed appropriate.

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Exhibit 1. Cover sheet for team member evaluation packet.

Name:
Group Name:
Section:
Date:

At three different times during the semester (near the end of each module), you will evaluate each of the members of your team. Fill in an evaluation sheet for each of your team members. All responses should be typed and then printed out.

Your evaluation and the evaluations from other members of your group will be returned to the person that is being evaluated. In order for these evaluations to be meaningful, you need to provide your team members with constructive feedback. Let your team members know what they are doing well and what they are not doing well. Also, let them know how they can improve their performance. When the forms are returned to your team members, they will not see your name associated with your comments on their performance.

Place your completed Team Member Evaluation Packet in a sealed envelope with your name, your group name, and your SB 101 section letter indicated on the outside of the envelope. The envelope should be turned in on the last day of the module.

The points that you award each team member will be used in determining that team members grade on that module's group project. Team members that do not do their fair share of the work may lose points on group work, and team members that do more than their fair share of the work may get extra points added to their group work.

On the overall evaluation, you will be "paying" each of your team members with points. You have will have 100 points for each member of your team. For example, if you have 6 members on your team, you have 600 points to allocate. If everyone contributed equally and did his/her fair share of the work, then each member of the team should receive 100 points. If someone did more than his/her fair share of the work, that person should receive more than 100 points. Likewise if someone did less than his/her fair share of the work, that person should receive less than 100 points.

After you have completed the individual evaluation forms (including a page for yourself), complete the Summary Table below. Type in your name and your team members' names. Indicate how many points each member of your team should receive. The points in this summary table should match the "pay" you indicated at the bottom of each person's individual page.

Add up the points that you have allocated across the columns of the summary table and put this number in the last column. This number should equal 500 points if you have 5 team members or 600 points if you have 6 team members.

Summary Table (Complete this Table)

Group Members Names	(Insert your name here)	(Insert group member's name here)	(Insert group member's name here)	(Insert group member's name here)	(Insert group member's name here)	(Insert group member's name here)	TOTAL TEAM POINTS
Allotment of Team Points							

Summary Table (Leave this Table Blank)

Your Group Evaluation Average	

If you do not feel that your group evaluation average accurately reflects the work that you completed on your group project, you should set up a meeting and talk with your team members. After talking with your team members, if you still do not feel that you have been evaluated fairly, you and your team should schedule a meeting with that module's professor.

Exhibit 2. Sample sheet in team member evaluation packet.

Team Member's Name: Sample Team Member

Evaluation Criteria:	For each criteria, rate this team member on a scale of 1 (Never) to 5 (Always)	Provide comments and constructive feedback in the spaces provided below:
Prompt in attendance at team meetings.	5	
Delivered agreed-upon parts of project in a complete fashion	5	
Met deadlines.	3	Sample team member was late completing the PowerPoint presentation. He was supposed to complete it on Wednesday afternoon, but he didn't finish until late Thursday night.
Volunteered appropriately during team meetings when tasks needed to be accomlished.	4	Sample Team Member was always at the meeting, but he was not always prepared for the meetings and hardly ever had anything to contribute. Sometimes, he just sat there.
Pulled fair share with regard to overall workload.	5	
Showed enthusiastic and positive attitude about team activities and fellow team members.	5	Sample Team Member was always enthusiastic about how our company was doing financially.

Overall Evaluation	
Based on the points available for the team, I would "pay" this person 85 for his/her share of the team points.	Overall Feedback (this is mandatory): Sample Team Member was really motivated at first, but at the end of the module, he let the team down when he was late with the PowerPoint. When he missed his deadline, it meant that the entire team had to stay up all night rehearsing our presentation. Once Sample Team Member knew he was having trouble with his part of the assignment, he should have asked for help.

ASSESSMENT OF THE ONLINE INSTRUCTOR

Irene S. C. Parietti, Felician College
David M. Turi, Felician College

ABSTRACT

In addition to measuring the efficacy of educating by the examination of student assessment, we will argue that the process of educating online itself needs to be monitored. We believe that peer oversight is necessary to maintain standards established by the institution, and that these standards need to be rigorously and continuously enforced. We offer a proposed rubric with which we believe standards in online educating can be maintained, and hope in the future to have measurable results.

INTRODUCTION

Online instruction has become a necessity for smaller institutions to grow and maintain a broader student base (Topper, 2007). In addition to fully-online courses, many schools offer hybrid options which augment the traditional classroom experience, mostly in a truncated and/or accelerated format, with an online component created to make up the deficit in contact hours and to enhance learning. Giving students a greater amount of flexibility with both scheduling and time management, online learning and hybrid learning has allowed smaller institutions to develop a unique student population that has been underserviced in the past.

Kirtman (2009) and others have shown results indicating that learning goals have been accomplished as successful whether instruction occurred in-class or online. Although online enhancements have given students measurable benefits, many students face certain challenges effectively employing online learning (Vigentini, 2009). Extraneous from financial and practical considerations, many students find online learning arduous (Topper, 2007). A certain student type may desire or require interaction with professor and peers for effective learning. Students may feel certain types of courses, particularly quantitative subjects, require active, face-to-face instruction, so that a real-time, interactive flow of information can occur.

Faculty members benefit from online instruction as well. Like their students, faculty members enjoy more flexibility in managing their time, an appreciated benefit as the role of faculty evolves in its service to administration as well as to the student body. The online format may provide less academic flexibility, but may allow faculty an enhanced ability to adhere to schedules and to learning objectives (Combs, *et al*., 2008). However, online learning has also provided faculty with different challenges (Lindsay, *et al*., 2009). Faculty members are charged with utilizing new and largely untested technology to teach otherwise familiar material, and the

difficulties of removing the personal interaction partially or entirely from the process has rendered certain learning objectives particularly difficult to achieve. In general faculty satisfaction levels seem dependent on institutional support. Bollinger and Wasilik (2009) have stated that faculty satisfaction is generally high when the institution values online teaching and has established policies that benefit the faculty, such as additional release time for online course development.

Coincident with online instruction are distinctive challenges for assessing student development and learning. With traditional classroom instruction time reduced or nonexistent, unbiased evaluation should more readily occur, as the bias present in the classroom experience (the "mutual back patting" referred to by Pounder (2008), which results in student rewarding the instructor with a high teacher rating as a way to repay good grades or other positive interactions) should be significantly decreased or removed entirely. However, challenges exist for proper and fair measurement of student achievement. The assessment of student learning is an ongoing challenge, regardless of the venue, and this field will continue to develop over time.

THE MARKET FOR ONLINE EDUCATION

Online education is becoming more prevalent. According to the 2008 Sloan Consortium report, over twenty percent of all US higher education students were taking at least one online course in the fall of 2007. The Sloan Consortium report points to the poor economy, leading to an increase in both unemployed and underemployed students, as being positive to overall higher-education enrollment. Programs with the flexible structure common to hybrid and online course structures are strong beneficiaries of the adult population interested in pursuing a degree. In addition to the increased flexibility offered to students, the online and hybrid forums are becoming more popular for a variety of reasons (Mahoney, 2009). The cost-effectiveness of web-based instruction cannot be overlooked. Although the cost of utilizing a room may be part of a larger fixed cost, having hybrid or online offerings allows an institution or division to expand beyond its physical plant.

Online education is commonly defined as having 80% or more of course content delivered online. Felician College offers several online courses (which we will designate as "fully-online"). All of Felician's online courses have a proctored final exam requirement, which is, for most online course offerings, the only face-to-face contact.

However the Division of Business and Management Sciences within the college has a large non-traditional student population which is currently being served with a hybrid structure, which is commonly defined as having 30 to 80% of course content delivered online. In the Division of Business and Management Sciences at Felician College, of our 262 undergraduate students, approximately 40% are non-traditional students, achieving their degrees through on- and off-campus programs. New Jersey state requirements call for 37.5 hours of contact time for each three-credit course. Courses in the off-campus undergraduate programs and all of the

graduate programs meet for either three or four hours over eight weeks, and the remaining contact hours are made up via an online component. (We currently have 83 students enrolled in the MBA program).

All of the traditional programs running on campus, as well as the non-traditional programs on-campus, which meet state requirements for full-contact time, have an online component (called an eCompanion). These will, at the bare minimum, have the syllabus attached, which includes the assignments, and virtual dropbox, which allows for electronic delivery of student assignments.

THE ASSESSMENT OF ONLINE INSTRUCTION

Institutions of higher education have acknowledged the critical need for developing standards that assure the quality of their online courses (Little, 2009), as online instruction is relatively new idea for both student and teacher. However, students' physical distance, their lack of direct responses, and the lack of restrictions over assessments found in the e-learning environment present challenges to evaluating the learning process (Halawi, 2009).

Although we continue to find student surveys to be useful and informative, there is considerable disagreement in relevant literature on the link between student evaluation of teaching and student achievement. While some studies may show that student evaluation surveys are valid multidimensional measurement tools, most investigations have found little correlation between student achievement and student ratings of their teachers (Alshare *et al*., 2009; Combs *et al*., 2008; Pounder, 2008; Topper, 2007). We are in the process of developing a new student satisfaction and feedback survey which we hope to present soon.

However, in order to attempt the fair evaluation of effective online instruction, we propose self- and peer-evaluation based on predetermined measurements. The development of online course standards supplemented by collegial peer review can offer the basis for a quality assurance process (Little, 2009). In its best form, peer-reviewer comments can provide friendly recommendations as well as specific examples of how the course met or did not meet the standards, and provide the faculty with suggestions for improving the quality of the course as well as the teaching style. Beyond its critical role in instructor retention, program assessment, and accreditation preparation, a faculty evaluation system can signal to faculty an institutional commitment to their ongoing professional development (Mandernach, 2005).

Starting with the Spring 2010 semester, Felician College has required that all online and hybrid courses must be taught by faculty members who have taken an in-house certification course. The full-time faculty members have had the opportunity to learn how to create and teach online courses, via a five-week course, which has nine major assignments, including analysis of pedagogical issues and creation of components of an online course. The part-time faculty is required to take a four-week course on how to instruct online. As of today, 19 adjunct business

faculty members have taken the course, which is offered twice a year, free of charge. Adjuncts, as of this time, are not allowed to develop courses.

In addition to the online certification programs, the Division of Business and Management Sciences has offered a chair-level position for the director of online pedagogy. This director has created a rubric to assess the online components of fully-online, hybrid, and traditional courses (see Appendix A). The rubric is divided into the two following areas:

- Course Design, which we define as how the online component has been structured; and
- Instruction, which we define as how the instructor facilitates learning in the online environment.

CREATION OF THE RUBRIC: EVALUATING THE COMPONENTS OF THE ONLINE COURSE

The rubric for course design covers the four following areas:

- The Online Syllabus
- Access to Campus Services
- The Online Lectures
- Assignments

Evaluation of the Online Syllabus

The online syllabus is slightly different in format from a syllabus for a traditional course. The main difference is that the online syllabus needs to include a detailed explanation of what is expected from the students, both in-class and online. In a traditional course, student context influenced students' perceptions and interactions with the classes (Mahoney, 2009). Online interactions can be difficult because non-verbal communication cues are absent. Appropriate behavior, regarding proper etiquette for interaction, helps reduce misunderstandings, and thus must be properly and explicitly defined. However, as online students are somewhat removed from the instructor, and may not feel comfortable posting a question that can be viewed by other students, or may not consider the question important enough to email the instructor, it is important that the instructor provide explicit details regarding expectations which would normally be covered as an aside in class. To this end, the online syllabus also needs to includes a detailed explanation of what will be provided by the instructor, both in-class and online. Also, due dates need to be given exactly, and the proper method for delivering assignments needs to be explained. Reiteration is important, and these details are also listed at the assignment point. We have found that students are less likely to ask questions online, even via email, or may wait until the last minute to do so. Thus, detailed explanations are necessary to ensure student comfort. Again, because students tend to hand assignments in at the last minute, answering questions in a

timely manner may be difficult. Thus, papers are given exact requirements for length and format, including proper citation of work. Also, quantitative assignments need guidelines regarding how much work needs to be shown, if assumptions need to be spelled out, and how diagrams or graphs need to be presented.

The syllabus also needs to include guidelines for interaction with the instructor. We require a virtual office, appropriate for general questions about the course and assignments. The response time is stated, so the instructor needs to check this regularly. Students are encouraged to email the professor with questions regarding grades. Additionally, grade rubrics are provided in the syllabus or as an appendix to the syllabus for each assignment type. Even more so than in a traditionally-taught course, transparency is important for student satisfaction.

A problem associated with online instruction is trying to ensure that the students feel connected to the college. As a mission-driven college, Felician strives to build a community, and thus we believe that a proper online component will provide the students with access to the following college services:

Access to the online library

In addition to including a Webliography, which is a categorized bibliography of supplemental online sources, access to the online library resources needs to be given.

Access to virtual office hours

Interaction with the professor needs to be encouraged as casual contact is not possible. By having a virtual office, which has been established as an online discussion thread, with a set response time (24 hours is usually encouraged), students contact will be encouraged.

Access to a virtual student lounge

Establishing another discussion thread as a virtual student lounge will encourage students to gain from shared experiences. Additionally, live chat rooms can be provided for a more private conversation.

Evaluation of the Online Lecture

Online lectures are created to replace a traditional lecture, but students are left without the ability to ask questions for immediate feedback. Thus, online lectures need to be more explicit, providing details that might not be presented formally in class, but may have been mentioned as an aside or as an answer to a clarifying question, but not adding too many details so as to lose the main audience. Hyperlinks to clarifying websites, additional lectures, or non

web-based scholarly journal articles are a way to add in details which some, but not all students, may need. This layering of information needs to be designed to address the needs of all students, from the weakest to the strongest. This also helps to address different learning styles; in the context of online learning, some students will explore resources in a linear fashion, while others will loop on specific and more limited resources within the same session (Vigentini, 2009). These hyperlinks should also link to ancillary resources addressing different learning styles, e.g. podcasts and videos for auditory and visual learners; progressive online multimedia environments will continue to facilitate the effective delivery of online instruction because they provide the dynamics involved in high-quality instruction (Gaytan, 2009). For this reason, Felician does not allow 100- or 200-level courses to be given as fully-online.

Evaluation of Assignments

Again, without the ability to ask last-minute questions, assignments need to be handled differently in an online forum. Regular assignments, such as papers or answering questions from a text, are standard to any course. In an online forum, however, regular assignments require more explanation. Each assignment should have clear explanations as to what is expected from the student and what can be expected from the professor, as online assessment requires a more ongoing, systematic approach (Gaytan, 2009). For example, with a writing assignment, the format (font, margins, spacing, etc.) and length (number of words or pages, and if the appendices should be included in this) of the paper, including the proper method for citations should be discussed, the exact method for handing in the assignment, and a specific due date, as well as any course policies as to whether or not a late submission is possible, and if points will be taken off if a late assignment is accepted. Although many of these details may be listed in the syllabus, we have found that these facts need to be reiterated at the assignment point in order to have the majority of students satisfied.

Similarly, as with regular assignments, for online assignments, any specifics as to due dates, formatting, and expectations need to be clearly stated at the assignment point. Online tasks, such as online examinations and online discussions, require some level of interaction, and are designed to measure the appropriate learning outcomes, i.e. they need to replace something that would have been a graded assignment in a traditional class; for example, an asynchronous online discussion may replace an in-class debate. For students who are taking an online course for the first time, a brief explanation on this point has been found helpful for students.

Assessment is another way to provide contact time for an online course. Each assignment must have a designated method of assessment (usually an associated rubric, easily identified and found); this helps to provide answers as to what the instructor expectations are which could have been asked for and given casually in a face-to-face format. A detailed assessment method helps students gauge their strengths and weaknesses, and may help them

prepare for the next assignment. The calculation of the final grade must also be made perfectly clear, as any grade disputes can adversely affect the quality of the course.

CREATION OF THE RUBRIC: EVALUATING ONLINE INSTRUCTION

Perfecting the format of the course is not the end of assessment; online instruction requires evaluation as well. The interactivity of instruction is particularly important, as these hours are meant to replace the contact hours missed from moving a course away from the traditional format. The faculty member needs to be motivated, and responsible to reply to all emails, post regular questions, and return assignments with the specified time (Hussin *et al.*, 2009) in order to meet student expectations for a successful online experience. Thus, we assess online instruction through three forums:

- The Virtual Office
- Interaction in online assignments
- Timely and detailed grading of assignments.

Additionally, the instruction is evaluated at different points. According to Mandernach (2005) a singular formal interaction may be effective in the more intimate environment of the on-ground campus, where evaluators have ongoing opportunities to interact informally with instructors based on proximity, this practice does not translate meaningfully to the virtual classroom.

Evaluating Use of the Virtual Office

The virtual office, as explained above, is a place for students to post general questions. Online instructors need to make certain that questions are answered clearly, and ensure that turn-around time is within the stated horizon. The instructor needs to make certain to edit responses carefully, and make certain that questions which pertain to grades or student-specific situations are handled outside of this forum. The virtual office can be seen as an extension of traditional office hours, but is most commonly seen as the online extension of the give-and-take seen in a face-to-face classroom.

Evaluating Interaction in Online Assignments

Online assignments most commonly consist of online examinations and online discussions. Online examinations need to be graded quickly, with explanations provided. Many software packages provide instructors the ability to have the correct answers displayed automatically upon return; while this can help reduce the response time, the instructor should

prepare a personalized communication for each student. Online discussions need to be given strict deadlines. We have found that assigning two due dates – one for the initial response, one for follow-up points, helps to ensure that students will refrain from procrastinating, and will allow the instructors two natural entry points to help guide the discussion with leading questions and comments. This also allows the online instructor to provide more detailed feedback.

Evaluating the Grading of Assignments

The grading of assignments must be detailed, as the face-to-face component is absent, and students tend to be reluctant to email or post questions. The absence of the friendly give-and-take present in face-to-face conversation may make written criticism seem unduly harsh, so it is particularly important for the instructor to stress the positive points as well as give specific details as to areas needing improvement. A quick turnaround time is also essential, so students are able to tackle future assignments with increased success.

CONCLUSION

Our conclusions are incomplete at this point; we have not had enough time and our sample size is not large for the proper testing of our rubric. However, we have developed a short list of ideas:

1. Syllabi need to be standardized.
2. Course formats need to be standardized. For this and the previous point, each student enrolled in a program cannot be expected to spend valuable time reacquainting himself to a new syllabus and course format. Students' expectations influence their perceptions and performance in the online learning environment (Mahoney, 2009), thus, managing their expectations, and developing a reasonable learning curve will help maximize student success.
3. Course and college expectations need to be established immediately, with as many anticipated questions, from the student and from the instructor, addressed. These first three points can be summarized in that the delivery model and supportive technologies must be consistent in an attempt to minimize the impact of change on both faculty and students (Gaytan, 2009), maximizing the potential of success.
4. Timely and detailed assessment is needed. Rubrics are the best way of standardizing this, and will allow not only the student to achieve greater comfort, but also will allow the instructor to have greater success, both in terms of speed and fewer conflicts with students.
5. The interactivity needs to be improved. This means a multidimensional online lecture, with hyperlinks designed to address questions for different student levels, as well as the encouragement of active participation in online discussions and a viable virtual office and student lounge can help with this dimension. According to Hussein *et al.*, synchronous

and asynchronous communication tools can be used to maintain high levels of communication among class and between the class members and the lecturers to promote the desired levels of interactivity.

6. The response time needs to be shortened, and again, to reduce the time spent grading, a detailed rubric appears to be the most helpful method for the online instructor.
7. Online courses need to be continuously modified, not just to reflect updated content information, but to revise according to student outcomes resulting from learning styles. Content includes all the conceivable materials that the students may need an in alternative forms (Hussin *et al.*, 2009). According to Vignentini (2009), more prescriptive teaching measures might be required for lower achieving students, whilst higher achieving students tend to take learning opportunities autonomously without detailed guidance. In classes with a wider range of capabilities and preferences, a systematic approach to evaluation of styles should offer a customized and differential experience for all students which would ultimately lead to better outcomes.

Ongoing faculty support for their teaching-learning is essential to ameliorate the perceived isolation of technology-enhanced education (Lindsay *et al*., (2009). A community of online learning in our institution has been created, centered about a separate ancillary division and the direction of online pedagogy. With this support in place, the acceptance of the assessment process has been positive in our division. Our faculty members have been apprised of every step in the creation of these rubrics, and have access to the rubrics when creating their online components. Additionally, the director of online pedagogy is available for consultation, and meets informally throughout the course duration. We stress repeatedly that the delivery only is being evaluated; the course content is not being appraised. Colleagues are best qualified to judge other faculty's teacher effectiveness (Shannon & Twale, 1996), and prior knowledge of strengths and weaknesses before evaluation help in creating an effective interaction. We stress that this is an ongoing process, and that the assessment of teaching via an online platform is a dynamic progression.

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APPENDIX A

Hybrid Course Online Oversight

First-Run Analysis

Semester:
Start Date/End Date:
Program/Cohort (if relevant):
Course Name and Number:
Creating Professor:
Teaching Professor:

Points are designated according to the following scale:
3 points: The standard is met entirely; exceptional.
2 points: The standard is met well; there may be one or two minor details which can be improved upon.
1 point: The standard is met on a basic level; there will be several minor details which can be improved upon, or one or two major flaws which need to be reworked entirely.
0 points: The standard is not met in any way or the area is not covered at all.

Areas which do not receive 2 or 3 points must be reworked before the online component is used again. It is highly recommended that areas that receive 2 points be reworked as well.

Preliminary Overview (1-2 weeks prior to start of course):

Dates:

Part I: Course Home:

Syllabus:

_____**Specificity:** The online syllabus should be detailed, with all information clearly articulated with specific but easy-to-follow directions to avoid confusion and misinterpretations.

_____**Information:** The syllabus should identify expected roles and responsibilities of students and instructor in the online environment as well as all special resources, procedures and issues relevant to a hybrid class, and follow the guidelines established by the Division. Hybrid courses need details as to what will be in-class and when and what will be online; while these details may not be part of the syllabus but rather of the individual modules, it is necessary to include in the syllabus the unique relevant features. A table is recommended. Dates should be included.

_____**Assessment:** Course and module/unit objectives are aligned with the Division-recommended assessment. Detailed rubrics are provided for each type of assignment.

_____**Tone**: Syllabus should clearly establish policy but maintain a friendly tone to ensure student comfort.

_____**Format:** Font and font size (unless altered for emphasis) are consistent throughout. Important points are highlighted with color or other emphasis. Graphics and pictures are of an appropriate size.

_____**Policies & Rules of Conduct for Online Participation**: College and course polices and rules of conduct spelled out with a notation that all aspects of the college's catalogue and student handbook apply equally to the online student.

Library:

_____Presentation: Link to the library's online resource guide is functional. Explanation of usage is given.

Virtual Professor's Office:

_____Presentation: The professor's response time is clearly stated. The online discussion function is working correctly.

Part II: Resources

Webliography:

_____Quality of Resources: The resources in the Webliography are of a high standard.

_____Presentation: Each link is functional. Resources may be categorized. A detailed description of each resource is provided.

DocSharing:

_____Quality of Resources: The resources in the DocSharing function are of a high standard. Printable syllabus should be included here.

_____Presentation: Each link is functional. Resources may be categorized. A detailed description of each resource is provided.

Drop Box:

_____Functionality: Dropboxes exist for all assignments. Dropboxes can be accessed easily via the appropriate module.

Grade Book:

_____Functionality: All written assignments, threaded discussions, online quizzes and examinations, and proctored exams are located in the correct module and with the correct points.

Part III: Modules/Units

Overall Design:

_____Functionality: An appropriate number of modules exist. The modules are of an appropriate length, both in terms of detail and time schedule.

_____**Format:** Font and font size (unless altered for emphasis) are consistent throughout. Important points are highlighted with color or other emphasis. Graphics and pictures are of an appropriate size.

Instructional Objectives:

_____Clarity: Each unit or module begins with a clear set of instructional objectives that relate back to the course objectives. The instructional objectives offer participants a focus as to the learning outcome of the module.

_____Usage: The objectives are clearly designated as being a goal of work to be done in class, outside of class, or online.
_____Assessment: Instructional objectives are aligned with the Division-recommended assessment.

Online Lectures:

_____**Format:** Lectures are of an appropriate length. Information is divided ("chunked") into multiple sections.

_____**Usage:** The lectures are clearly designated as needing to be read before a specific class. The lectures should indicate how it relates to work to be done in class.

_____**Quality of Resources:** Appropriate hyperlinks are utilized. All links should be functional.

Reading Assignments:

_____**Format:** Reading assignments are clearly explained. Due dates are clearly explained.

_____**Quality of Resources:** Online resources as well as the course text are utilized. All links should be functional. Use of unique sources of information (YouTube, PowerPoint presentations, etc.) to accommodate different learning types is encouraged.

Written Assignments:

_____**Format:** Written assignments are clearly explained. Due dates are clearly noted. Writing standards, including length and formatting of paper, are included. Use of the dropbox, and use of additional resources (TurnItIn, LiveText, etc.) are clearly explained.

_____**Quality of Resources:** Written assignments should have a separate tab under the appropriate module. The due date should be entered in the Course Checklist. The dropbox should be functioning.

Threaded Discussions:

_____**Format:** Online scholarly discussions are clearly explained. Due dates for initial postings and responses are clearly noted. Writing standards, including length of responses and handling of citations, are included.

_____**Quality of Resources:** Online scholarly discussions should have a separate tab under the appropriate module. The due date should be entered in the Course Checklist. The threaded discussion function should be active.

Additional Assignments

_____**Format:** Graded online quizzes and examinations may be part of a hybrid course. Also, ungraded interactive self-tests are a welcome addition. All additional assignments should be clearly explained. Due dates for graded additional assignments are clearly noted. Writing standards, if appropriate, are included.

_____**Quality of Resources:** Graded additional assignments require a separate tab under the appropriate module. The due date should be entered in the Course Checklist.

Preliminary Overview Comments and Recommendations:

First Interim Check (1-2 weeks into the course):

Note that one or more scores of 0 or 1 will require that this course be subject to a second interim check. All courses will have this first interim check, as well as the final check.

Dates:

Virtual Office Hours:

_____**Response:** Professor is responding promptly to queries and comments made in the virtual office.

Drop Box:

_____Usage: Rubrics are being appropriately used and returned with grades to the students in a timely manner.

Grade Book:

_____Response: Professor is posting grades for all written assignments, threaded discussions, online quizzes and examinations, and proctored exams in a timely manner. Grades are being posted correctly.

Threaded Discussions:

_____Response: Professor is responding to each student individually with questions and comments showing a depth of understanding of the topic. Professor is utilizing leading questions to encourage further discussion, and correcting direction for discussions wandering off topic.

First Interim Check Comments and Recommendations:

Second Interim Check (3 to 5 weeks in, dependent on score of previous interim check):

Note that one or more scores of 0 or 1 will require that this course be subject to a third interim check.

Dates:

Virtual Office Hours:

_____**Response:** Professor is responding promptly to queries and comments made in the virtual office.

Drop Box:

_____Usage: Rubrics are being appropriately used and returned with grades to the students in a timely manner.

Grade Book:

_____Response: Professor is posting grades for all written assignments, threaded discussions, online quizzes and examinations, and proctored exams in a timely manner. Grades are being posted correctly.

Threaded Discussions:

_____Response: Professor is responding to each student individually with questions and comments showing a depth of understanding of the topic. Professor is utilizing leading questions to encourage further discussion, and correcting direction for discussions wandering off topic.

Second Interim Check Comments and Recommendations:

Third Interim Check (1 to 2 weeks prior to end of course):

Note that one or more scores of 0 or 1 will require that the instructor of the course undergo three interim checks in the next course, fully-online or otherwise, to be taught.

Dates:

Virtual Office Hours:

_____**Response:** Professor is responding promptly to queries and comments made in the virtual office.

Drop Box:

_____Usage: Rubrics are being appropriately used and returned with grades to the students in a timely manner.

Grade Book:

_____Response: Professor is posting grades for all written assignments, threaded discussions, online quizzes and examinations, and proctored exams in a timely manner. Grades are being posted correctly.

Threaded Discussions:

_____Response: Professor is responding to each student individually with questions and comments showing a depth of understanding of the topic. Professor is utilizing leading questions to encourage further discussion, and correcting direction for discussions wandering off topic.

Third Interim Check Comments and Recommendations:

Final Check (1-2 weeks after end of course)

Dates:

Grade Book:
_____Response: Final grades have been posted. Grades have been given according to the grading policy listed in the syllabus.

WHAT IS YOUR ROA? AN INVESTIGATION OF THE MANY FORMULAS FOR CALCULATING RETURN ON ASSETS

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ABSTRACT

This paper compares the eleven different versions of computing return on assets that can be found in current business textbooks. To illustrate the practical differences between the different versions, each version of ROA is calculated for eight slightly different example firms. The results are then compared and analyzed. Pros and cons are then discussed for each version of ROA. A practical ROA taxonomy is proposed to organize the several different versions and to improve comparability.

INTRODUCTION

A recent study by Mankin and Jewell (2010) of ratios in 77 current business textbooks made several interesting discoveries. The study included accounting, finance, management, marketing, and financial statement analysis textbooks. Two of the most interesting points are as follows. First, textbook authors are in unanimous agreement on how to calculate very few ratios. The current ratio, gross profit margin, and dividend yield are the most notable of these ratios. Second, most ratios, even the most commonly used ones, have several alternate formula versions. Common ratios with substantial disagreement in the formulas are return on assets, quick ratio and inventory turnover.

This research focuses on return on assets (ROA) because it is a popular ratio with many different formula variations. This paper will show the eleven different ratio formulas found in current business textbooks and propose three additional ROA formulas that would be possible based on the sample data.

LITERATURE REVIEW

Financial Ratios

Financial ratios are used for several important purposes. Whittington (1980) summarized two basic uses of financial ratios: normative and positive. Normative uses include measuring a

firm's ratios to a standard such as another company or to an industry average. Positive uses include estimation of financial variables such as profit margins, returns, leverage, and stock prices. Positive uses can also include researchers using predictive models for corporate failure, bankruptcy, and credit risk.

Normative uses of financial ratios involve two primary functions: financial analysis and business education. Financial analysis involves evaluating a firm's profitability and riskiness and then comparing them to industry averages. Ratios generally involve a mathematical proportion of X / Y that allows analysts control in two ways (Barnes, 1987). First, ratios control for the size of the financial information. Because of this characteristic, different firms' current ratios can be compared even if the firms' current assets and/or current liabilities are not comparable. Second, ratios control for industry factors. Industries often have unique characteristics that are seen if a firm's financial ratios are compared to the industry average. It is axiomatic that a firm's financial ratios should be compared to industry averages. Both financial researchers (Lev, 1969) and textbook authors (White, Sondhi, & Fried, 2003) recommend that financial analysis should include industry averages. This type of recommendation is a normative use of ratios.

A second normative use of financial ratios includes their use in business education. Financial ratios are an important tool in business education. Students learn to use financial ratios in accounting, finance, marketing, and management classes. Huefner (2002) argued that financial ratio preparation and analysis is an important part of the very first accounting course. Recently, the New York State Society of Certified Public Accountants (NYSSCPA) has issued a white paper of educational goals for CPA candidates (Fierstein, 2008). The preparation and interpretation of financial ratios were included in the NYSSCPA goals for students preparing for careers as CPAs.

Besides normative uses, financial ratios also have positive uses. Positive uses of financial ratios include estimating certain financial variables or predicting future outcomes such as bankruptcy or business failure. Financial ratios are used in many financial research studies to predict certain outcomes. Several studies have tested whether financial ratios are normally distributed. For example, Deakin (1976) concluded that a normal distribution could not be assumed for financial ratios with the possible exception of the debt/assets ratio.

One of the more well-studied positive uses of financial ratios is in the area of business failures. Beaver (1966) used financial ratios of failed firms and non-failed firms to predict business failure. Since each ratio was analyzed separately, this was essentially a univariate technique. He identified financial ratios that were predictive in identifying failed firms. Altman (1968) expanded this into multivariate research by using multiple discriminant analysis (MDA). This research led to the Z-score model that is widely used in business failure analysis (Krantz, 2010). Altman (2000) later expanded the Z-score model into a second-generation predictive model called Zeta® analysis.

Return on Assets

Return on Assets (ROA) is one of the most popular and useful of the financial ratios. ROA has been used in industry since at least 1919 when the DuPont Company used it as the top of its ratio triangle system. The ratio was called return on investment and was calculated as Profit / Total Assets. The base of the DuPont triangle was the expanded ROA formula: Profit Margin (Profit / Sales) and Capital Turnover Ratio (Sales / Total Assets) (Horrigan, 1968).

The importance that educators and practitioners place on ROA can be seen in three ways. First, at least one ROA formula is presented in most business textbooks. ROA was the third most frequently presented ratio in a study of business textbooks, appearing in 70 of the 77 textbooks (Mankin & Jewell, 2010). Only the current ratio and inventory turnover ratio occurred more often than ROA.

Second, at least one version of ROA is used often in failure prediction studies. The original Altman (1968) Z-Score included ROA as one of its five factors used to predict business failure using a version defined as Earnings Before Interest and Taxes / Total Assets (EBIT / TA). Beaver (1966) also used ROA as one of the six ratios used to predict business failure. The ROA version in the Beaver study was Net Income / Total Assets (NI / TA). Hossari and Rahman (2005) ranked the popularity of all financial ratios used in studies predicting business failures. Their study included 53 previous studies from 1966 to 2002 and ranked 48 separate ratios. The ROA version Net Income / Total Assets (NI / TA) was the single most common ratio in all the failure prediction studies.

Third, analysts often use ROA in their investigation of a firm's financial position, performance, and future prospects. Gibson (1987) surveyed Chartered Financial Analysts about the importance of many financial ratios. The study included four different versions of ROA, and each version was selected by at least 90% of the CFA respondents as a primary measure of profitability.

Return On Assets In Textbooks

Of all of the ratios presented in business textbooks, authors disagree the most about return on assets. In the Mankin and Jewell (2010) study, 70 of the 77 textbooks included ROA. The study found eleven different versions of ROA in business textbooks. The different versions of ROA are shown in Table 1, along with the frequency with which they appear in the sample.

Table 1: ROA Formulas and Frequencies (Mankin & Jewell, 2010)			
Version	Formula	Number in Sample	Percent in Sample
1	Net Income / Total Assets	28	40.00%
2	Net Income / Average Total Assets	11	15.71%
3	(Net Income + Interest Expense) / Average Total Assets	8	11.43%
4	[Net Income + Interest Expense x (1-Tax Rate)] / Average Total Assets	7	10.00%
5	Earnings Available to Common Shareholders / Total Assets	5	7.14%
6	Earnings Before Interest and Taxes / Average Total Assets	3	4.29%
7	Operating Profit / Total Assets	2	2.86%
8	(Net Income + Interest Expense) / Total Assets	2	2.86%
9	[Net Income + Interest Expense x (1-Tax Rate)] / Total Assets	2	2.86%
10	Earnings Before Tax / Total Assets	1	1.43%
11	Earnings Before Interest and Taxes / Total Assets	1	1.43%
TOTALS		**70**	**100.00%**

In the Table 1 data, 28 textbooks, or 40% of the textbooks in the sample, define ROA as Net Income / Total Assets. To simplify the discussion, a version number has been assigned to each ROA formula. So, the most popular formula for ROA has been assigned version 1, the second most popular is version 2, etc.

It is important to understand that Table 1 does not include "semantic" differences in how the ratio is defined or how the formula is displayed. Table 1 has standardized all insignificant differences in terminology, of which there were many. All eleven versions of ROA can be economically and mathematically different in different situations, sometimes by large amounts. Each version should also be defined and interpreted in slightly different ways in an economic or accounting sense. This idea will be expanded on later. It is also important to realize that each of the eleven versions was simply called "Return on Assets" or "Return on Total Assets" or some other synonymous term in the textbook. These naming issues have the potential to cause considerable confusion among students and practitioners who may assume that the version of ROA in a given textbook is the only version of ROA, or the definitive version of ROA.

This is not to say that the ratios above are only known as "Return on Assets." For example, five other textbooks in the sample include the ratio Earnings Before Interest and Taxes / Total Assets (EBIT / TA). However, in those five texts that ratio is known as "Basic Earnings Power." Therefore those five observations are not included in Table 1.

A few basic observations about the various versions of ROA can be made simply by noting the details of Table 1. First, the most widely used version of ROA is also the simplest version, Net Income / Total Assets (NI / TA). Second, the top two versions comprise about 56% of the sample, while the bottom nine versions comprise the other 44%. Third, several versions of ROA have identical numerators but differ in that one version averages total assets in the denominator while the other does not. Version 1 and 2 of ROA fit this pattern, as do versions 3 and 8, 4 and 9, and 6 and 11. So, out of the eleven versions of ROA there are only seven unique numerators. Fourth, the ratios can be categorized not only based on their denominators, but also based on the "size" of their numerators. The versions with Operating Profit, EBIT, or EBT in the numerator will obviously give answers of larger magnitude in most situations than those with after-tax numbers in the numerator.

Table 2: ROA Versions by Size and Denominator

Version	Formula	Abbreviated Formula
	Panel A: Denominator = Total Assets	
7	Operating Profits / Total Assets	OP / TA
11	Earnings Before Interest and Taxes / Total Assets	EBIT / TA
10	Earnings Before Tax / Total Assets	EBT / TA
8	(Net Income + Interest Expense) / Total Assets	(NI + IntExp) / TA
9	[Net Income + Interest Expense x (1- Tax Rate)] / Total Assets	[NI + IntExp(1-T)] / TA
1	Net Income / Total Assets	NI / TA
5	Earnings Available to Common Shareholders / Total Assets	EACS / TA
	Panel B: Denominator = Average Total Assets	
12*	Operating Profits / Average Total Assets	OP / ATA
6	Earnings Before Interest and Taxes / Average Total Assets	EBIT / ATA
13*	Earnings Before Tax / Average Total Assets	EBT / ATA
3	(Net Income + Interest Expense) / Average Total Assets	(NI + IntExp) / ATA
4	[Net Income + Interest Expense x (1- Tax Rate)] / Average Total Assets	[NI + IntExp(1-T)] / ATA
2	Net Income / Average Total Assets	NI / ATA
14*	Earnings Available to Common Shareholders / Average Total Assets	EACS / ATA

Table 2 attempts to organize the various versions of ROA in a more logical manner. The ratios are separated based on whether or not the denominator averages total assets; they are also arranged in descending order of typical magnitude. Although the study found only eleven versions of ROA in textbooks, there are three additional valid versions that can be constructed by

combining three of the existing numerators with average total assets as the denominator. These new versions are all denoted with a * on the version number. For example, there is no version of ROA in the sample defined as Earnings Available to Common Shareholders / Average Total Assets (EACS / ATA). This version is introduced in Table 2 and given the version number 14*. This new version 14* has the same numerator as ROA version 5. Table 2 also introduces an abbreviated formula for each version.

Since the versions are now organized in a logical way, the differences can be analyzed. The two denominators, total assets and average total assets, can be compared.

Why do some authors average total assets while others do not? It is interesting to note that of the 70 textbooks in the sample that include a formula for ROA, 29 (41.4%) of the texts average the total assets in the denominator while 41 (58.6%) of the textbooks do not. It is even more interesting to note that 24 of 29 (82.8%) of all the texts that use average total assets are accounting textbooks. The accounting texts used average total assets in 24 of the 28 (85.7%) textbooks. Only 4 of the 42 (9.5%) non-accounting texts used average total assets. The reason for this is very simple. ROA compares an income number (a flow measure) to total assets (a stock measure). Whenever comparing flow measures to stock measures accountants like to average the stock measure in order to preserve the matching principle. Apparently, however, the authors of the finance, management and marketing texts in the sample feel no compulsion to preserve the matching principle in their versions of ROA.

Comparing the Denominator

So what is the practical impact of averaging the denominator versus not averaging? A very simple example can answer this question. In this example, consider the two most basic and popular versions of ROA, versions 1 and 2. These two versions have the same numerator, net income, but version 2 averages the denominator while version 1 does not. Holding net income constant, each ratio is calculated for several years and several different levels of total assets. This will isolate the effect of averaging the denominator. Calculations are shown in Table 3.

Table 3: The Impact of Averaging the Denominator

		2006	2007	2008	2009	2010
	Net Income	$12,000	$12,000	$12,000	$12,000	$12,000
	Total Assets	$100,000	$90,000	$100,000	$110,000	$120,000
VERSION						
1	NI / TA	12.00%	13.33%	12.00%	10.91%	10.00%
2	NI / ATA	--	12.63%	12.63%	11.43%	10.43%

There are several interesting observations can be made from this example. First, and most obviously, one extra year of ROA can be calculated with version 1. Since averaging the denominator requires two years worth of total assets, analysts must have at least two years of data before they can calculate an ROA with version 2. Second, based on the results for 2007, when total assets are falling, averaging the denominator yields a lower ROA (version 2 < version 1). Third, the reverse is true for 2008. When total assets are rising, averaging the denominator yields a higher ROA (version 2 > version 1). Fourth, focusing on 2007 - 2010, averaging the denominator may make ROA slower to recognize trends. In this case the firm appears to be adding non-productive assets (assets that do not contribute to income). This makes both ROA's fall, but version 1 begins to fall more quickly than version 2. The reverse would be true as well. If the firm were to shed inefficient assets the positive trend should be detected more quickly by version 1. Of course if variation in total assets were not informative for some reason, analysts would prefer an ROA that was less affected by the "noisy" changes. Assume for the moment that the variation of total assets from 2006 - 2008 was not meaningful. Version 2 has the advantage of being unaffected by these noisy changes in total assets. A summary of the advantages of each denominator can be found in Table 4.

Table 4: Advantages of Each Denominator

Denominator	Advantages
Average Total Assets	1. Preserves the matching principle
	2. Less affected by "random" changes in total assets
	3. Higher ROA when assets are rising
Total Assets	1. Simplicity
	2. Requires less data to calculate ROA
	3. Quicker to react to trends
	4. Higher ROA when assets are falling

Comparing the Numerator

Table 5 begins the process of comparing the seven different numerators. Once again simple examples will illustrate the practical differences between the ratios. In order to fully explore the differences between the seven numerators, ROA is calculated for eight different example firms. These example firms have identical operating income and total assets; however, they each differ in one important variable, such as interest expense. In order to simplify the analysis even further only a few firms will be compared at a time. The first comparison, highlighting the effects of non-operating items, appears in Table 5.

Table 5: The Effects of Non-Operating Items on ROA				
		FIRM A	**FIRM B**	**FIRM C**
	Firm Description	**Base**	**Non-Operating Income**	**Non-Operating Loss**
	Total Assets	$500,000	$500,000	$500,000
	Tax Rate	40%	40%	40%
	Income from Operations	$100,000	$100,000	$100,000
	Plus: Non-Operating Income	**0**	**10,000**	**(10,000)**
	EBIT	100,000	110,000	90,000
	Less: Interest Expense	0	0	0
	EBT	100,000	110,000	90,000
	Less: Tax	40,000	44,000	36,000
	Net Income	60,000	66,000	54,000
	Less: Preferred Dividends	0	0	0
	EACS	60,000	66,000	54,000
VERSION				
7	OP / TA	**20.00%**	**20.00%**	**20.00%**
11	EBIT / TA	20.00%	22.00%	18.00%
10	EBT / TA	20.00%	22.00%	18.00%
8	(NI + IntExp)/ TA	12.00%	13.20%	10.80%
9	[NI + IntExp(1-T)] / TA	12.00%	13.20%	10.80%
1	NI / TA	12.00%	13.20%	10.80%
5	EACS / TA	12.00%	13.20%	10.80%

Table 5 compares Firm A, the base firm, to Firm B, which has non-operating income, and Firm C, which has non-operating losses. Note that version 7 of ROA is exactly the same for all three firms. Every other version is higher for firm B, due to the presence of non-operating income. Likewise, every other version is lower for firm C, due to the presence of non-operating losses. So, version 7 of ROA has the distinct benefit of being completely unaffected by non-operating items. This makes version 7 particularly useful when comparing different firms that have varying levels of non-operating items.

The second comparison, highlighting the impacts of interest expense, appears in Table 6. Here important differences among the various versions really start to emerge. In this example we are comparing Firm A, the base firm, to Firms D and E. Firm D is a low debt firm with low interest expense, while Firm E is a high debt firm with high interest expense. We can make four interesting observations from Table 6. The first two observations will certainly not be surprising, while the latter two may be.

Table 6: The Effects of Interest Expense on ROA

		FIRM A	**FIRM D**	**FIRM E**
	Firm Description	**Base**	**Low Debt**	**High Debt**
	Total Assets	$500,000	$500,000	$500,000
	Tax Rate	40%	40%	40%
	Income from Operations	$100,000	$100,000	$100,000
	Plus: Non-Operating Income	0	0	0
	EBIT	100,000	100,000	100,000
	Less: Interest Expense	**0**	**10,000**	**30,000**
	EBT	100,000	90,000	70,000
	Less: Tax	40,000	36,000	28,000
	Net Income	60,000	54,000	42,000
	Less: Preferred Dividends	0	0	0
	EACS	60,000	54,000	42,000
VERSION				
7	OP / TA	**20.00%**	**20.00%**	**20.00%**
11	EBIT / TA	**20.00%**	**20.00%**	**20.00%**
10	EBT / TA	20.00%	18.00%	14.00%
8	(NI + IntX)/ TA	12.00%	12.80%	14.40%
9	[NI + IntX(1-T)] / TA	12.00%	12.00%	12.00%
1	NI / TA	12.00%	10.80%	8.40%
5	EACS / TA	12.00%	10.80%	8.40%

First, both version 7 and 11 of ROA are completely unaffected by interest expense. Second, higher interest expense leads to lower values of ROA for versions 10, 1, 5. Comparing the results for Firm D and Firm E shows this. Third, higher interest expense leads to higher

values of ROA for version 8. This seemingly perverse result actually makes sense if we interpret version 8 as being an "all investors" ROA. In other words, version 8 is measuring the total return on assets generated for both debt and equity holders. To restate, version 8 is measuring the total return on assets available to pay both debt and equity holders of the firm. Fourth, version 9, like versions 7 and 11, is also completely unaffected by debt levels and interest expense. However, since version 9 is based on Net Income it yields a smaller value than versions 7 or 11, which are both based on pretax numbers.

So, if an analyst wanted to compare the ROA's of various firms while eliminating any differences caused by debt policy he could use version 7 or 11 for a pre-tax ROA or version 9 for an after-tax ROA. If the analyst wanted to compare ROA's while considering the differences caused by debt policy, he would use version 10 for a pre-tax ROA or version 1 or 5 for an after-tax ROA. Finally, if an analyst wanted to know an "all investors" ROA she would use version 8.

Table 7: The Effects of Taxes and Dividends on ROA

		FIRM A	**FIRM F**	**FIRM G**	**FIRM H**
	Firm Description	**Base**	**Tax Loss Carryforwards**	**Preferred Dividends**	**Common Dividends**
	Total Assets	$500,000	$500,000	$500000	$500,000
	Tax Rate	40%	40%	40%	40%
	Income from Operations	$100,000	$100,000	$100,000	$100,000
	Plus: Non-Operating Income	0	0	0	0
	EBIT	100,000	100,000	100,000	100,000
	Less: Interest Expense	0	0	0	0
	EBT	100,000	100,000	100,000	100,000
	Less: Tax	40,000	**20,000**	40,000	40,000
	Net Income	60,000	80,000	60,000	60,000
	Less: Preferred Dividends	0	0	**10,000**	0
	EACS	60,000	80,000	50,000	60,000
	Less: Common Dividends	0	0	0	**10,000**
	Additions to RE	60,000	80,000	50,000	50,000
VERSION					
7	OP / TA	**20.00%**	**20.00%**	**20.00%**	**20.00%**
11	EBIT / TA	**20.00%**	**20.00%**	**20.00%**	**20.00%**
10	EBT / TA	**20.00%**	**20.00%**	**20.00%**	**20.00%**
8	(NI + IntExp)/ TA	12.00%	16.00%	12.00%	12.00%
9	[NI + IntExp(1-T)] / TA	12.00%	16.00%	12.00%	12.00%
1	NI / TA	12.00%	16.00%	12.00%	12.00%
5	EACS / TA	12.00%	16.00%	10.00%	12.00%

Table 7 shows the effects of taxes and dividends on ROA. In this example, the base firm is compared to firms with different levels of taxes and dividends. Firm F has tax loss carry-

forwards that cut its tax expense for the current year in half. Firm G pays a preferred dividend, while firm H pays a common dividend. There are several observations we can draw from Table 7.

First, Firm F's tax situation highlights the fact that we have three pre-tax versions of ROA, versions 7, 11, and 10, and four after-tax versions of ROA, versions 8, 9, 1, and 5. The pre-tax versions of ROA are unaffected by Firm F's tax loss carry-forward. However, the after-tax versions of ROA all benefit from higher values caused by the reduced taxes. Second, Firm G's preferred dividend only affects version 5 of ROA, causing it to be lower than version 5 for the base firm. Since version 5 is the only version to subtract preferred dividends, it can be thought of as a "common shareholders ROA." Finally, it is interesting to note that all of the versions of ROA are identical for Firm A and Firm H. This highlights the fact that none of the versions of ROA are affected by common dividends.

The examples above illustrate that each version of ROA can be useful in the proper context. The various numerators are all measuring something slightly different. Table 8 summarizes the advantages of each numerator.

Table 8: The Advantages of Each Numerator

NUMERATOR	ADVANTAGES
Operating Profit	1. Unaffected by non-operating items, debt levels, taxes, or dividends
	2. Useful for comparing firms with different exposure to non-operating items
EBIT	1. Unaffected by debt levels, taxes, and dividends
	2. Useful for comparing pre-tax returns of firms with different capital structures
EBT	1. Unaffected by taxes and dividends
	2. Useful for comparing firms with different tax situations
(NI + IntExp)	1. Measures "all investors" ROA
	2. Shows the total ROA available to "pay" investors a return
[NI + IntExp(1-T)]	1. Eliminates the effects of different debt levels and interest expense
	2. Useful for comparing after-tax returns of firms with different debt levels
Net Income	1. Simplicity
	2. The "bottom line" ROA for all equity holders
EACS	1. The only version that considers preferred dividends
	2. The "bottom line" ROA for common shareholders

Earlier in the paper, the issue of "naming confusion" was mentioned. This “naming confusion” potentially arises from calling so many different formulas that all measure slightly different things "return on assets." To help alleviate this problem we propose new names for many of the versions of ROA. The proposed taxonomy serves two different purposes: the proposed names are descriptive of the mathematics involved with the ratio and the proposed names will help differentiate each version of ROA from every other version. The proposed taxonomy is shown in Table 9.

Table 9: Proposed Taxonomy for the Different Versions of ROA		
Version	**Formula**	**Proposed Name**
7	OP / TA	Operating Return on Assets
11	EBIT / TA	Basic Earning Power (This name is already widely used for this version)
10	EBT / TA	Pre-tax Return on Assets
8	(NI + IntExp) / TA	All Investors Return on Assets
9	[NI + IntExp(1-T)] / TA	Debt Neutral Return on Assets
1	NI / TA	Net Return on Assets
5	EACS / TA	Common Shareholders Return on Assets
12*	OP / ATA	Operating Return on Average Assets
6	EBIT / ATA	Basic Earning Power of Average Assets
13*	EBT / ATA	Pre-tax Return on Average Assets
3	(NI + IntExp) / ATA	All Investors Return on Average Assets
4	[NI + IntExp(1-T)] / ATA	Debt Neutral Return on Average Assets
2	NI / ATA	Net Return on Average Assets
14*	EACS / ATA	Common Shareholders Return on Average Assets

CONCLUSION

Return on assets (ROA) is a popular and well-known ratio. It is used by analysts to measure the profitability of a firm and by researchers to make predictions on financial variables and events. However, the current study shows that there are eleven different versions of ROA in current business textbooks. One of the problems with the existence of so many disparate versions is that it makes comparability between versions more difficult. Imagine analysts, sitting around a boardroom, or students in a study group attempting to discuss the ROA of a firm. Unless they have previously agreed upon the ROA version to be used, there could be considerable confusion. It is possible, even likely, that different participants will have different "correct" answers and draw different conclusions about the profitability of the firm depending on the version of ROA used.

Now imagine a student or a professional researching a firm using Yahoo!Finance, Morningstar, or any other financial data service. Unless she understands the version of ROA used by that site, she is very likely to misuse and misinterpret the data. This problem is compounded when comparing different ROA's from different data sources.

Therefore, based on the analysis above, it is appropriate not to think of ROA as a single ratio but as a "category of ratios." This category includes almost any ratio that compares an earnings related number from the income statement to Total Assets or Average Total Assets. This study shows each of the eleven versions of ROA can have a valid use in the proper context, but that none should be presented as the only or the definitive version of ROA. In the future, it would be beneficial for both students and practitioners if textbook authors would use names that

would more accurately reflect the uses and highlight the differences among the various versions of ROA. Perhaps a decade from now, instead of multiple versions of ROA all sharing the same name, there will be a less confusing and more descriptive nomenclature in use.

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EVIDENCE ON THE ASSOCIATION BETWEEN MAJOR AND PERFORMANCE IN THE INTRODUCTORY FINANCIAL ACCOUNTING COURSE

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ABSTRACT

This study investigates the differences in student performance in the introductory financial accounting course across various combinations of majors. This paper advances current research on the association of student performance and selection of major by using data from sources other than self reporting. Approaching the research question from a fresh perspective, the study provides empirical results that supplement the findings of previous research using surveys and experiments.

The study utilizes the Kruskal-Wallis test and discriminant analysis in conducting empirical tests. The results suggest that, relative to students of other majors, the accounting majors are more likely to have higher grades in the introductory financial accounting course. A closer examination reveals that the accounting and finance majors share similarities in all variables except gender and length of programs. While the accounting program attracts more female students, the finance majors tend to graduate earlier. Further analysis also indicates that, compared with other business majors, accounting and finance majors are better performers and spend less time to complete their programs.

INTRODUCTION

Dramatic changes in the accounting profession in the last two decades seem to have changed the landscape of accounting education. As a primary source of supply of professionals to the industry, the accounting major in higher education has experienced ups and downs in popularity. Researchers have been concerned with the decrease in accounting students and have considered various strategies for attracting students to accounting (e. g., Cohen & Hanno, 1993; Adams, Pryor, & Adams, 1994; Lowe & Simons, 1997) and retaining qualified students in accounting (Adams et al., 1994). Previous literature has shown that the student experience and performance in the first accounting course is one of the most significant factors associated with the student perception of pursuing a career in the field (Geiger & Ogilby, 2000; Chen, Jones & McIntyure, 2008). Understanding the characteristics of the students choosing accounting as their

academic major could assist accounting educators in structuring accounting courses and advising students in career development.

In the past, the two primary research methods used to examine the association between student characteristics and choice of major have been surveys and experiments. In both methods, data is collected from students through self-reporting, leading to the possibility of self selection bias. Subjects may choose to select themselves into a particular sample, potentially leading to biased results and invalid inference. Unlike prior studies, this study employs data that were collected by the authors from an academic database. The data represent objective measurements of student characteristics and performance in reality. The empirical examination of data free of self selection provides an objective and fresh perspective on the link between student performance in the first accounting course and major. The results of this study supplement the findings from self-reported data and present a broad view on the factors influencing student choice of major. This study offers accounting educators and researchers insights into the association between student performance and major selection.

LITERATURE REVIEW

Prior research exploring the selection of majors by undergraduate students has shown that the student choice is based on multiple reasons, including but not limited to, career perspectives, expectation of job opportunities, stability of the career, and personal interest and skill set (e.g., Cohen & Hannon, 1993; Lowe & Simons, 1997; Kim, Markham, & Cangelosi, 2002; Guney, 2009). Researchers have examined the motivations of the students in major selection using various research methodologies. Most of the research methods are based on self reported data collected in surveys and questionnaires (e.g., Kim et al., 2002; Guney, 2009). Other studies have used experiments to investigate the psychological and behavioral aspects of the student major selection (e.g., Cohen & Hanno, 1993).

Using a cognitive-based theory, Cohen and Hanno (1993) examined the student choice of major in an experimental setting. Their findings indicated that success in introductory courses, math background, and work load were among the factors influencing a student's decision on the major (Cohen & Hanno, 1993). Lowe and Simons (1997) collected data from a survey and reported that external factors such as future earnings and career options motivated second year college students in selecting accounting as their major. Using data collected from the management school of a British university, Guney (2009) utilizes an econometric model to examine the exogenous and endogenous factors associated with student performance in accounting courses. The results corroborate the previous findings that the non-accounting students are more likely to be poor performers in undergraduate accounting modules than in courses in other fields (Guney, 2009).

Paolillo and Estes (1982) found that most accounting professionals chose a major in the second year of college or before. For most full time students, taking the first introductory

accounting course falls in the time frame of the second year of the college. In addition, Cohen and Hanno (1993) and Chen et al. (2008) reported that performance in the introductory courses was an important factor in determining a student's major selection. This connection between selection of a major and student performance in the introductory accounting course deserves further investigation. Based on previous research, we argue that the student performance in the introductory financial accounting could be an indicator of their major. To facilitate the empirical tests, we develop the first hypothesis as presented below.

H1: Accounting majors can be differentiated from other majors by their performance in the introductory financial accounting course.

Within the school of management, students pursuing various business majors differ in their perceptions on major selection. These differences have been examined by researchers. For instance, Kim et al. (2002) examined the factors that influence the student choice of business majors. They found that student interest in the work related to a major was an important factor, as well as the previously identified concerns of job opportunities and projected earnings (Kim et al., 2002). Other researchers have focused on the investigation of this topic from the perspective of the skill set of the students. The study performed by Pritchard et al. (2004) indicated that accounting and finance majors demonstrated similar skills than the students of other business majors such as marketing and management. Schlee, Current, Harich, & Kiesler (2007) documented the existence of the differences of student perceptions on majors. Their study further documented that accounting and finance majors share a high level of similarity in their skill set (Schlee et al., 2007). The above discussions lead to the following two hypotheses:

H2: Accounting majors cannot be differentiated from finance majors by their performance in the introductory financial accounting course.

H3: Accounting and finance majors can be differentiated from other business majors based on their performance in the introductory financial accounting course.

BACKGROUND

The data for this study were hand collected from the academic database of a regional campus of a public university in the Midwest. The campus is located in an urban environment and had been strictly a commuter campus before August 2005, when limited student housing became available. The student body is composed of traditional students who attend school full time and non-traditional students who have full or part time jobs and attend college part time. Fewer than 10% of the students live on campus.

Business programs are housed in the School of Management. Introduction to financial accounting is a required course for all students in the degree programs of that school. The same

course is required of both accounting and non-accounting students. Some non-business students also enroll in the course as an elective. The prerequisite to enroll in introductory financial accounting course is a grade of C or better in a mathematics course. The objective of the course is to introduce the student to the procedures and practices used in the recording of accounting information. The course focuses on the sources and uses of accounting information and its relevance in the decision making process. Introduction to financial accounting course serves as prerequisite to other accounting courses, including introduction to managerial accounting, and some finance courses. A grade of C or better is considered a passing grade for this course.

RESEARCH DESIGN AND METHODOLOGY

Data collection

The data used in this study were collected from the records of students in the introductory financial accounting course. These students were selected for the study because they still had considerable flexibility in major selection without significantly changing their academic plan of study. The major is an important variable used in the analysis. Hence the data set included only students who had graduated with a bachelor's degree to avoid the problem of a change in major late in a student's career.

We collected the data of students from all sections of the introduction to financial accounting course during fall and spring semesters in years 2000 and 2005. We collected data in year 2005 and earlier based on the experience that most students take more than 5 years to complete the program. Data of two years are included in the dataset to account for the possible effect of the fluctuations in the demand for accounting professionals and students. We also performed robustness tests to further control for the year effect of the empirical results. The findings show that the hypothesis testing is not sensitive to the factor of years.

The list of variables and variable definitions are presented in Table 1.

Table 1: Variables and Variable Definitions

Variable	Type of Variable	Variable Definition
Major	dummy	1: accounting major; 2: non Accounting & Finance business major; 3: non business major (including associate degree in business); 4: finance major; 5: engineering major.
Age	numeric	age as of data collection date.
Gender	dummy	0:female; 1: male.

Table 1: Variables and Variable Definitions		
Variable	Type of Variable	Variable Definition
Math passing grade (math_pass)	dummy	4: A 3: B 2: C 1: D 0: F
Math previous grade	dummy	6: withdrawal 5: not applicable (students pass math prerequisite at first attempt) 4: A 3: B 2: C 1: D 0: F
Times taking math	numeric	
Fin acct passing grade (200 pass)	dummy	4: A 3: B 2: C 1: D 0: F
Fin acct previous grade	dummy	6: withdrawal 5: not application (students pass math prerequisite at first attempt) 4: A 3: B 2: C 1: D 0: F
Times taking math	numeric	
Semester of fin acct	dummy	1: Spring 2: Fall
Course load of taking fin acct (load of 200)	numeric	The credit hours that the student took for the semester when s/he earned passing grade in introductory accounting class.
Length of program (length)	numeric	Semesters of taking 6 credit hours or more (including spring, fall, or summer semesters)

The observations that did not meet the requirements for further analysis were dropped. First, students who did not pass the course or withdrew from the course were removed from the sample. Second, students who had not graduated at the time of data collection were also removed. Third, transfer students were also excluded from the sample because of the

unavailability of the grade for the mathematics prerequisite. In addition, the computation of the number of semesters to complete the degree programs for transfer students is difficult to determine because of limitations in the database.

Data Analysis

The final dataset contains 182 observations from all the sections of the introductory financial accounting course in years 2000 and 2005. The descriptive statistics of the dataset are presented in Table 2. The GPA at graduation of the students included in the sample has a mean of 3.08 and ranges from 2.08 to 4.00. The means of the passing grades of the math prerequisite and the introductory financial accounting course (200 is the course designator) are 2.71 and 2.90, respectively. The course load for the semester of passing the introductory financial accounting course has an average of 11.90 semester hours, indicating that the average student in introductory financial accounting takes approximately four 3-credit courses per semester. The mean length of program is 11.92 semesters, suggesting that it normally takes a student 5-6 years to complete the program without taking summer classes. The descriptive statistics of the complete sample set are consistent with the nature of the school, which has a majority of non-traditional students and a low traditional residential population.

Table 2 Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
gender	182	1.00	0.00	1.00	0.49	0.50	0.02	0.18	-2.02	0.36
GPA	182	1.93	2.07	4.00	3.08	0.43	0.21	0.18	-0.51	0.36
math passing grade	182	3.00	1.00	4.00	2.71	0.82	0.34	0.18	-1.01	0.36
fin acct passing grade	182	3.00	1.00	4.00	2.90	0.82	0.13	0.18	-1.36	0.36
course load of passing fin acct	182	15.00	3.00	18.00	11.90	2.97	-0.39	0.18	0.26	0.36
length	182	11.00	6.00	17.00	11.92	2.18	-0.31	0.18	-0.99	0.36

Descriptive statistics also show that our key variables are not normally distributed. For normally distributed variables, skewness and kurtosis should be close to or equal to zero. The descriptive statistics in Table 2 show that this is not the case for our data.

The hypotheses are tested by comparing the means of the various groups. Because the underlying assumption of a normal distribution does not hold for the dataset, the ANOVA (F-statistic) for mean comparison is not applicable. As a result, we decided to use the Kruskal-Wallis test, a nonparametric test for group comparison when the assumption of normal distribution is violated. The null hypothesis of the test assumes that the groups are from identical populations.

Following the research methodology of Lowe & Simons (1997), we incorporate discriminant analysis in our study to supplement the results from the mean comparison using the Kruskal-Wallis test. Discriminant analysis is generally used to determine the variables that could distinguish between groups. A major function of discriminant analysis is to predict the classification of the cases. Specifically, the discriminant analysis can predict the membership of a particular case after the model is finalized.

RESULTS OF TESTING HYPOTHESES

Panel A of Table 3 illustrates the results of comparisons of means across the different majors. The sample contains a total of 182 students, including 30 accounting majors, 17 finance majors, 70 students in other business majors (excluding accounting and finance), 15 engineering majors, and 50 in various other majors. The results indicate that the student performance in the introductory financial accounting is significantly different ($p < 0.01$) across the categories with a Chi-square equal to 10.221. In addition, the variables gender and length of program are both significantly different ($p<0.05$) for the various categories.

Table 3: Comparison between Accounting Majors and Other Majors

Panel A: Significance of ranking of criteria relative to other majors: Kruskai-Wallis Test

Criteria	Accounting Major	Finance Major	Non Accounting & Finance Business Majors	Engineering Major	Other Majors	Chi-square
	(N=30)	(N=17)	(N=70)	(N=15)	(N=50)	
financial acct passing grade	115.47	90.35	85.99	101.43	82.24	10.221**
age	84.68	103.35	84.36	112.43	95.28	5.388
gender	76.83	105.38	90.7	125.37	86.54	13.553**
GPA	92.77	86.44	88.24	104.27	93.19	1.374
math passing grade	97.58	96.88	91.88	97.77	83.61	2.213
course load of passing fin acct	99.81	89.47	90.86	98.13	86.11	1.706
length	93.02	51.68	106.38	42.9	97.88	31.006**

**significant at < 0.05; *significant at p< 0.10

H1: Accounting majors can be differentiated from other majors by their performance in the introductory financial accounting course.

Hypothesis 1 is tested by comparing the performance of accounting majors with that of all other students. Panel B of Table 3 shows the results of comparing the means of the variables for 30 accounting majors with the means for 152 other majors. This comparison shows that there is a statistically significant difference in performance between accounting and non-accounting majors in the introductory financial accounting course (Chi-square = 8.387, $p<0.01$).

Table 3: Comparison between Accounting Majors and Other Majors

Panel B: Significance of ranking of criteria relative to other majors: Kruskai-Wallis Test

Criteria	Accounting Major	All non-accounting Majors	Chi-square
	(N=30)	(N=152)	
fin acct passing grade	115.47	86.77	8.387**
Age	84.68	92.85	0.614
Gender	76.83	94.39	3.712*
GPA	92.77	91.25	0.021
math passing grade	97.58	90.3	0.553
course load of passing fin acct	99.8	89.86	0.987
Length	93.02	91.2	0.032

Stepwise discriminant analysis was used to generate a table to determine whether performance in the introductory financial accounting course is able to allow unique classification of accounting majors versus non accounting majors. The analysis shows that the performance in the introductory financial accounting course is statistically significant in discriminating between the two groups (untabulated). The classification matrix illustrating the percentage of correct classifications for the sample is illustrated in Panel C of Table 3. The test shows that overall 73.1% of the cases can be correctly classified by the discriminant analysis using performance in the introductory financial accounting course as the independent variable.

Table 3: Comparison between Accounting Majors and Other Majors					
Panel C: Classification Results					
		Major	Predicted Group Membership		Total
			Non Accounting	Accounting	
Original	Count	Non Accounting	117	35	152
		Accounting	14	16	30
	%	Non Accounting	77.0	23.0	100.0
		Accounting	46.7	53.3	100.0
a. 73.1% of original grouped cases correctly classified.					

The empirical results of both the Kruskal-Wallis test and the discriminant analysis support hypothesis1, suggesting that accounting majors can be differentiated from non-accounting majors by the performance in the introductory financial accounting course. A closer examination of the descriptive statistics by group in Table 3 Panel D suggests that accounting majors normally have higher grades (mean= 3.30) in the introductory financial accounting course than non-accounting majors (mean = 2.82).

Table 3: Comparison between Accounting Majors and Other Majors				
Panel D: Group Statistics				
Major Groups		Mean	Valid N (listwise)	
			Unweighted	Weighted
Non accounting Majors	fin acct passing grade	2.82	152	152
Accounting Majors	fin acct passing grade	3.30	30	30
Total	fin acct passing grade	2.90	182	182

H2: Accounting majors cannot be differentiated from finance majors by their performance in the introductory financial accounting course.

The results of the comparison of accounting majors and finance majors are presented in Table 4. As illustrated in Panel A, the mean comparison suggests that there is no statistical difference between accounting and finance majors in terms of performance in the introductory financial accounting course. However, the variables gender and length of program are statistically different ($p<0.01$) between the two groups.

Table 4 Panel A: Significance of ranking of criteria relative to other majors: Kruskal-Wallis Test			
Criteria	Accounting Major	Finance Major	Chi-square
	(N=30)	(N=17)	
fin acct passing grade	26.27	20	2.611
Age	21.83	27.83	2.161
Gender	21.33	28.71	4.229**
GPA	23.85	24.26	0.1
math passing grade	24.15	23.74	0.011
course load of passing fin acct	24.97	22.29	0.479
Length	27.87	17.18	6.853**
**significant at < 0.05; *significant at p< 0.10			

The discriminant analysis substantiates the results from the Kruskal-Wallis test by indicating that the model using the performance of the introductory financial accounting course as the independent variable failed to distinguish between accounting and finance majors (untabulated). Hypothesis2 is supported in that the performance of accounting and finance majors is similar in the introductory accounting course.

Table 4 Panel B Discriminant Analysis					
Classification Results[a]					
		major	Predicted Group Membership		Total
			Accounting	Finance	
Original	Count	Accounting	22	8	30
		Finance	4	13	17
	%	Accounting	73.3	26.7	100.0
		Finance	23.5	76.5	100.0
a. 74.5% of original grouped cases correctly classified.					

The discriminant analysis is also used to further explore the two features differentiating the two groups. The results in Panel B of Table 4 show that 74.5% of original grouped cases can be correctly classified by the function using gender and length of program as independent variables. The descriptive statistics in Panel C provide more detailed information in showing that there are fewer male (mean of gender = 0.33, with 0 represents female and 1 represents male)

students pursuing accounting as their major. In addition, the accounting students spent more time in finishing the program (mean of length = 11.97).

Table 4 Panel C: Discrimant Analysis					
Group Statistics					
Major		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
Accounting	gender	0.33	0.48	30	30
	length	11.97	2.13	30	30
Finance	gender	0.65	0.49	17	17
	length	10.24	1.82	17	17
Total	gender	0.45	0.50	47	47
	length	11.34	2.17	47	47

The dataset is regrouped to test the difference between accounting & finance majors and other business majors. Engineering students and non-business majors are not included in this analysis. As described in Panel A of Table 5, the performance in the introductory financial accounting course is significantly different ($p<0.01$) between these two groups. Similarly, the length of program also varies between the two groups.

The results from the discriminant analysis using the performance in the introductory financial accounting course and length of program as independent variables are consistent with those from mean comparison test (untabulated). Panel B of Table 5 presents the relevant statistics for these two groups. The mean grade in the introductory financial accounting class is 3.15 for accounting and finance majors, compared to 2.80 for other business majors. This suggests that accounting and finance majors tend to do better than other business majors in the introductory financial accounting course. In addition, accounting and finance majors tend to finish the program in a shorter period of time than other business majors.

Table 5 Panel A: Significance of ranking of criteria relative to other majors: Kruskal-Wallis Test			
Criteria	Accounting & Finance Majors	Other Business Majors	Chi-square
	(N=47)	(N=70)	
fin acct passing grade	66.77	53.79	4.624**
Age	61.31	57.45	0.376

Table 5 Panel A: Significance of ranking of criteria relative to other majors: Kruskal-Wallis Test			
Criteria	Accounting & Finance Majors	Other Business Majors	Chi-square
Gender	57.64	59.91	0.169
GPA	59.84	58.44	0.048
math passing grade	61.13	57.57	0.357
course load of passing fin acct	60.96	57.69	0.294
Length	47.85	66.49	9.180**
**significant at < 0.05; *significant at p< 0.10			

H3: Accounting and finance majors can be differentiated from other business majors based on their performance in the introductory financial accounting course.

The classification matrix derived from the discriminant analysis using performance in the introductory accounting course also corroborates the results by showing that 63.2 % of the observations were correctly classified by the function. The empirical results support Hypothesis 3 in that accounting and finance majors can be differentiated from other business majors by their performance in the introductory accounting course.

Table 5 Panel B: Discriminant Analysis					
Group Statistics					
Major		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
Other Business Majors	fin acct passing	2.80	.809	70	70
	grade	12.57	1.877	70	70
Accounting &Finance Majors	fin acct passing	3.15	.859	47	47
	grade	11.34	2.170	47	47
Total	fin acct passing	2.94	.844	117	117
	grade	12.08	2.081	117	117

Table 5 Panel C: Disciminant Analysis					
Classification Results					
		Major	Predicted Group Membership		Total
			Other Business Majors	Accounting &Finance Majors	
Original	Count	Other Business Major	29	41	70
		Accounting & Finance Major	14	33	47
	%	Other Business Major	41.4	31.4	100
		Accounting & Finance Major	29.8	70.2	100
a. 53.0% of original grouped cases correctly classified.					

We also tested the effects of the time of year (fall versus spring) and the year (year 2000 versus 2005) on the empirical results (untabulated). The above sensitivity tests show that the empirical results are not statistically different from those presented above. The robustness to the factor of year indicates that the empirical results are stable over the years.

DISCUSSION OF EMPIRICAL RESULTS

In this study, we use objective measurements and test the association between the performance in the introductory financial accounting course and various majors. Consistent with the hypotheses, we find that accounting majors tend to do better than all other majors in the first accounting course. Meanwhile, our findings are consistent with prior studies which suggest that students majoring in accounting and finance have similar characteristics. Further analysis also reveals that accounting and finance majors are similar in all categories except gender and length of program. Our findings suggest that, compared with finance majors, accounting programs attracted more female students and the accounting students tended to spend more time to complete the program. Based on the similarity of accounting and finance majors, we partition the data and regroup the majors. In the comparison between accounting & finance majors with other business majors, we find that accounting and finance majors were more likely to perform at a higher level in the introductory financial accounting course. Accounting and finance majors also tended to spend fewer semesters in their course work than other business majors.

This study also demonstrates that, at least in one university setting, accounting and finance are attracting students who seem to perform at a higher level than other majors in the introductory accounting course. The issue of transportability across different institutions, however, is common in the field of education research that investigates the determinants of

student performance. The data of this study were collected at a single university in an urban setting, where many of the students are part-time students with full-time jobs. Hence we do not claim generalizability of the results to other universities or learning environments.

Closer observation shows that, though accounting and finance majors are better performers in the introductory financial accounting course, they do not have superior quantitative abilities when measured by math prerequisite. It can be implied that factors other than the innate quantitative abilities contribute to better performance of accounting and finance majors in the first accounting course. Causality cannot be inferred because the objective data in this research were not designed to examine the underlying cognitive motivations.

SUMMARY AND FUTURE RESEARCH

One of the prominent influential factors for student major selection is the student performance in the first accounting class. Intuitively speaking, those students performing well in the first accounting class have self confidence to succeed in the upper level accounting courses. On the other hand, students who have already decided to major in accounting or finance may have increased motivation to work hard and achieve good grades in this class. The causality dilemma between student performance in the first accounting class and choice of major is not the focus of this study and thus we do not claim any causal relationship between them.

The aim of this study was to document differences in student performance in the introductory financial accounting course across majors. This paper contributes to the existing literature in a number of ways. First, this study uses several statistical tools to examine the differences between accounting and non-accounting majors. In addition, the collection and use of non-self-reported data in the models reduces the potential for self selection bias in the results. Unlike our study, prior studies do not employ objective data to examine the association between major and student performance in the introductory financial accounting course. Most papers use data collected from questionnaires and surveys, methods that are inherently subject to self selection bias. Our study investigates the topic using objective measures and provides new evidence to supplement the findings derived from other methods. Future research may apply a larger sample size to expand the study. Longitudinal study of the association between student performance and major could also be interesting to further investigate the changes over the years.

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A STUDY OF NON-TRADITIONAL AND TRADITIONAL STUDENTS IN TERMS OF THEIR TIME MANAGEMENT BEHAVIORS, STRESS FACTORS, AND COPING STRATEGIES

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ABSTRACT

Non-traditional students have been returning to colleges and universities at a rapidly growing rate. This study investigated the stress factors and methods of coping of these non-traditional students during their university experience as compared to traditional students. A survey was conducted at a four-year southwestern state university that was projectable to the entire student population. Respondents were queried with regard to demographics, attitudes, behaviors and outcomes, such as grade point average, levels of stress and coping strategies in the college experience. The research indicates that non-traditional students bring different expectations for the college experience, were less involved in various college social activities and were less interested in "having a good time" in college than traditional students. Non-traditional students experienced differing levels of motivation, campus involvement, and participation in social activities from their traditional counterparts which related to time management issues and lead to differing levels of stress and methods of coping between the two groups of students.

INTRODUCTION

From the demographic and involvement standpoint, the study was similar to previous research (Newbold, Mehta & Forbus, 2010). This examination built upon the previous research by exploring time management characteristics, the origins of stress in traditional and non-traditional students, and the coping strategies employed. This paper is of value` in adding to the existing knowledge base of the consequences of time management issues for non-traditional and traditional students.

The size of the non-traditional student population has been on the increase (Newbold, Mehta & Forbus, 2010). These students represent a variety of characteristics such as being over 24 years of age, working full time, and often having dependents to support. Many non-traditional students attend college part time. Between 1996 and 2006, the number of non-traditional

undergraduate college students increased at a rate of 30% to 50% (Bye, Pushkar, & Conway, 2007). The National Center for Education reports that 73% of all students have some characteristics of the non-traditional student (Compton, Cox, & Laanan, 2006). These students bring with them desires and needs that are different from their traditional counterparts on campus (Newbold, Mehta & Forbus, 2009). The shifting campus population toward non-traditional students necessitates that colleges and universities understand and adapt to these changing student needs in order to improve student satisfaction and involvement with the college experience and their persistence toward degree attainment.

While the demographic characteristics of the non-traditional student are reasonably well-understood, the sources of their stress with college life and the coping strategies they employ have not been as thoroughly researched. Take, for example, a hypothetical institution that is slow to recognize their growing non-traditional student base, and thus does not appropriately modify its offerings, policies and procedures to better meet the needs of the growing non-traditional student base. One might reasonably expect that the non-traditional students would be, at a minimum, inconvenienced, and, at times, disadvantaged relative to their traditional counterparts (Mehta, Newbold, & Forbus, 2009). This would result in various stress coping behaviors, negative attitudes about the institution and the college experience, and lower grade point averages on the part of the non-traditional students. It might also result in non-traditional students who were unable to persevere in their quest for a degree. Time management skills have been identified as one indication of higher performance and lower stress and anxiety (Kearns & Gardiner, 2007).

The purpose of this study was to examine the differences between non-traditional and traditional students with regard to stress factors and coping strategies. A projectable survey was conducted at a four-year southwestern state university. Students were asked about such attitudinal issues as motivation for attending college, degrees of involvement in college-sponsored activities, school/work life balance, and feelings of academic stress. In addition, coping behaviors were investigated. It was hoped that the findings of this research would contribute to the expanding body of work related to non-traditional students, and provide guidance to administrators and educators alike to better meet the needs of their constituencies.

LITERATURE REVIEW

Research on non-traditional students generally defines them as those who have not followed a continuous educational path into college (Newbold, Mehta & Forbus, 2010). Consequently, they tend to be typically older than traditional students (Evelyn, 2002). Mature students tend to be more diverse than younger students in their expectations of the college or university and in their motivations for attending (Newbold, Mehta & Forbus, 2010). Adult students have had experiences in life and in their careers that have broadened their general outlook. Over the past fifty years, U.S. employment has gradually shifted from manufacturing

blue-collar oriented jobs to white-collared service related professions, bringing more adults to institutions of higher education to allow them to be prepared for career adjustments. Non-traditional college students have significantly more time and role tensions than traditional college students (Morris, Brooks, & May, 2003). The external demands and differing responsibilities create time limitations that traditional students may not encounter (Lundenberg, 2003). With the increase in non-traditional students attending college, there is a need to understand how balancing of the multiple demands and roles of work, school, and life affects adult students.

Stress and apprehension are complex occurrences that can have both positive and negative results. Anxious students do not perform well in unstructured, independent study projects where less anxious students might excel (Nicolson & Bess, 1997). Having to deal with new and challenging information and ideas is likely to trigger a number of responses from the students including stress, uncertainty, and anxiety (Papanastasiou & Zembylas, 2006). Coping can be a partial moderator signifying that the student does have some control over the negative impact of stress (Giancola, Grawitch, & Borchert, 2009).

Stress emerged as an important variable with relationships to grade point average (GPA) and intent to persist along with goal commitment. Non-traditional college students with lower levels of academic stress and more satisfaction with their academic experiences also manage their time well (Kearns & Gardiner, 2007). Two additional areas of stress are related to non-traditional students: the extent of apparent demands within work, school, and personal life, and the role conflict between work, family, and school (Giancola, Grawitch, & Borchert, 2009). Unlike traditional students, non-traditional students have responsibilities related to their work and personal lives that may lead to demand overload and role conflict when merged with school. These additional demands and responsibilities can create time limitations that traditional students are not apt to experience. Non-traditional students have reported the greatest tension between work and school, and these work stresses were a direct predictor of general well-being (Giancola, Grawitch, & Borchert, 2009). This may be because of the fundamental role that work plays in the life on a non-traditional student. Combining a degree with employment can have negative consequences with students missing classes, doing less reading, and experiencing higher levels of stress (Robotham, 2009).

Studies indicate that many students who postpone their enrollment into colleges or universities are married and have dependents (Newbold, Mehta, & Forbus, 2010 and Leonard, 2002). Returning to school is an added obligation that impacts family interaction. Some couples report a renegotiating of the household division of labor and childcare to accommodate changes in schedules and workloads (Sweet & Moen, 2007). Balanced with the stress of the added responsibilities, students have reported spending time with their families as the biggest stress reducer (Canales-Gonzales & Kranz, 2008). The time management experience of non-traditional students has the effect of improved functioning and alleviation of feelings of stress (Kearns & Gardiner, 2007).

Academic performance and completion objectives might be related to a student's style of coping. It has been suggested that, even though non-traditional students are more apt to work full time, these students are not affected by working, commuting, or time limitations because they have more experience at time management (Lundberg, 2003). These students with more time management behaviors considered themselves to be more effective at work, had higher levels of moral and lower levels of stress (Kearns & Gardiner, 2007). However, recent research has suggested that work stressors may play a greater role than personal or academic stressors for non-traditional students (Giancola, Grawitch, & Borchert, 2009). These stressors are potential reasons for non-traditional students relying more often on task-oriented coping strategies which focus on the problem. Students engage in direct action to modify the situation and reduce the amount of stress it causes. Task-oriented coping action might include engaging a tutor, setting aside more study time, or other active ways to solve the stress-causing problem. The possibility of having multiple roles increases task-oriented strategy out of necessity in supporting the focus on learning for its own sake (Morris, Brooks, & May, 2003). For non-traditional students, task-oriented coping is related to learning goals and to higher GPAs (Morris, Brooks, & May, 2003).

Studies indicate that adaptive coping can predict a positive outcome such as greater well-being and greater satisfaction with life (Kohler & Munz, 2006). Non-traditional students have reported using more adaptive coping strategies, such as planning, and less on maladaptive strategies, such as denial and substance abuse (Giancola, Grawitch, & Borchert, 2009). In studying student drinking, it has been found that the root causes of excessive drinking revolve around depression, anxiety, peer pressure, and the desire for social acceptance (Gilroy, 2009).

Affective factors seem to play a crucial role in success or failure, and anxiety is one of the affective factors which play an important role in the learning process (Tasnimi, 2009). To help better understand the issues, concerns, and needs of non-traditional students, a study was conducted at a southwestern four-year state university with a significant proportion of non-traditional students.

RESEARCH METHODS

Exploratory Research

To facilitate the development of the survey instrument, a focus group was conducted with a convenience sample of non-traditional students. The results of the focus group clearly demonstrated that the needs of non-traditional students may be significantly different from those of traditional students.

The Survey Instrument

The instrument developed for the study was a self-administered, structured, and undisguised questionnaire. Besides the fact that this type of instrument is the fastest, least expensive, and most popular (Aldrek & Settle, 2004), our primary motivation for selecting this form of instrument was that it was the most appropriate methodology (given our sampling frame, targeted sample size, time frame, etc).

Recognizing the fact that the instrument was meant to measure ideas and concepts that are abstract and non-observable, extra care was taken in designing the questionnaire in terms of proper phrasing of the questions, and a neat layout of the various sections. Face validity was conducted with three researchers in the Marketing Department. A pilot study was conducted with a sample of the population to determine the accuracy of instructions, the best wording of the questions, the appropriateness of scales, etc. Since the topic under investigation was somewhat sensitive, extra care was taken to eliminate any ambiguity in the questionnaire. Seven-point Likert scales were used extensively to assess Student's time management strategies, their attitudes toward stress, and their stress coping strategies.

Approximately 3-4 items were developed to represent each construct under investigation. Nominal to ratio scales were used to obtain classification information. The survey took between 10 and 12 minutes to complete. To encourage participation from respondents, all completed responses were eligible to participate in a random drawing.

Operationalizing "Non-Traditional"

Non-traditional status has been operationalized a number of different ways in the preceding research. One commonality of all definitions is the requirement that the student be over the age of 24. Some researchers have added other requirements, such as marital status, presence of children or dependents, and work status. For purposes of this research, "non-traditional" was operationalized simply as over 24 years of age. Of the overall ending sample of 471 respondents, 97 are classified as "non-traditional".

Sampling and Data Collection

The study was conducted among a projectable sample of the student population at a mid-sized southwestern four-year university. The general demographic of the students attending this university include 42% male and 58% female; Whites=67%, African-Americans=15%, Hispanics=14%, and Others=4%; and Freshmen=21%, Sophomores=18%, Juniors=21%, Seniors=27%, and Others=13%.

In order to create the ability to generalize the responses and to eliminate any type of bias in the responses, students of an undergraduate marketing research course were trained to obtain 5

completed surveys each. To ensure accuracy of data collection and completion, 5% of each student's course grade was tied into this process. A stratified sampling plan was deployed, with strata controlling for both year in school (i.e., freshman, sophomore, etc.) and college attending (College of Business Administration, College of Education, etc.). The ending sample was found to represent student population as a whole with a margin of error of ±4.5%. The validity of the sample was examined by a Chi-square goodness-of-fit test where the sample was compared to the population of the institution on key demographic variables. All Chi-squares were determined to be non-significant at the 0.05 level. This is an indicator that the sample is projectable to the population under study.

Data Quality

The items in the survey were developed based upon the literature review, focus groups, and the special circumstances of the institution where the research was conducted (Churchill & Brown, 2007). Since this was primarily an exploratory study, a minimum factor loading of 0.30 (Nunnally, 1978) was used as a guideline for including items in a factor. The reliability of each factor was evaluated utilizing an internal consistency measure. Factors with Cronbach Alpha less than 0.70 were not used for the analysis. In some cases, the analysis was performed utilizing individual items.

HYPOTHESES

Demographic

Many earlier studies have reviewed the characteristics of non-traditional students (Mehta, Newbold, & Forbus, 2009; Newbold, Mehta, & Forbus, 2010; Bye, et al, 2007; Leonard, 2002; Berker, et al, 2003; Carney-Crompton & Tan, 2002; Choy, 2002; Evelyn, 2002; Sweet & Moen, 2007: Lundberg, 2003; Lundberg, 2004). In this research, we sought to establish whether non-traditional students were significantly diverse from traditional students particularly in the area of stress and methods of coping. Work may be a stronger source of stress due to its integral role in the life of a non-traditional student. Of the three spheres of influence (personal, work, and school), students may have the least control over their work situation (Giancola, Grawitch, & Borchert, 2009). Thus, the first three hypotheses are as follows:

Non-traditional students are more likely to be married or living with a significant other than traditional students

Non-traditional students are more likely to be commuter students than traditional students

Non-traditional students are more likely to work more hours than traditional students

Attitudes/Involvement

Differences between traditional and non-traditional students suggest that they will have different expectations of their experiences with higher education institutions. Non-traditional students have a high level of desire for developing as a person and for preparing for career goals (Chao & Good, 2004). Attitudes toward academic difficulties will differ between traditional and non-traditional students. More mature students are expected to display a more serious attitude toward their motivation for attending college; and, therefore, adult students are projected to participate less in school activities, campus social events, and be less involved with fellow students and faculty, although adult students are affected positively by social and academic integration variables (Lundberg, 2003).

Involvement relates to how integrated the students are in various activities associated with the university (Mehta, Newbold, & Forbus, 2009). Involvement generally refers to time and effort invested in participation in organized activities offered by an institution of higher education. Because of the demands of their lifestyle, non-traditional students are expected to be too busy with work, families, and school to take advantage of the opportunities which lead to involvement in campus activities. The next four hypotheses are as follows:

Non-traditional students are less concerned about having a good time in college than traditional students

Non-traditional students are more interested in graduating as soon as possible in order to start a career than traditional students

Non-traditional students are not as active and involved in various on-campus and off-campus activities as traditional students

Non-traditional students do not feel a part of the college environment as traditional students

Stress and Coping

The hypotheses posed thus far measure the disparity between non-traditional and traditional students' life styles along with their reported expectations and experiences with the college environment. The variations between the two groups of students steers one toward the belief that, for traditional and non-traditional students, there is a variation in levels of stress and

coping strategies in the college experience. Studies have shown that stress levels were perceived as moderately high, and financial issues are one of the biggest contributors to stress (Canales-Gonzales & Kranz, 2008). The responsibilities associated with employment increases students' stress levels, but a majority of working students report that they feel the obligation to work (Robotham, 2009). The commuting student tackles challenges that the non-commuting student typically doesn't face, especially feelings of isolation, multiple life roles and different support systems (Newbold, Mehta & Forbus, 2010a). It is felt that these differences are a source of greater stress for non-traditional students. Another source of increased stress is linked to the fact that non-traditional students have more time limitations associated with academics and campus activities because of a more complex lifestyle than traditional students (Newbold, Mehta & Forbus, 2010a).

Stress and academic performance are universal issues in college students' lives. A coping style is the typical manner in which an individual will confront a stressful situation. It has been found that non-traditional and traditional students utilized different coping styles with active coping skills being utilized more often by non-traditional students. (Morris, Brooks & May, 2003). Active coping involves addressing the stress directly with such techniques as time management, planning, and developing solutions. A passive coping style is associated with skipping classes or meetings and going to a party or bar (Palmer & Rodger, 2009). Thus, the hypotheses dealing with these variables are as follows:

Non-traditional students have a higher level of stress related to money issues than traditional students

Non-traditional students have a higher level of stress related to work issues than traditional students

Non-traditional students have a higher level of stress related to commuting issues than traditional students

Non-traditional students have a higher level of stress related to a general lack of time than traditional students

Non-traditional students are less likely to utilize active stress management methods than traditional students

Non-traditional students more likely to utilize passive stress management methods than traditional students

Outcomes

Hypotheses dealing with key outcome measures were also tested. These include GPA (grade point average), overall levels of stress experienced, and overall satisfaction level with the college experience. With the factors defining non-traditional students, they are placed on a gamut from "minimal risk" to "ultrahigh risk" for persistence toward their degree or certificate (Ashburn, 2007). Thus, the hypotheses dealing with key outcome variables are as follows:

Non-Traditional Students are generally more "stressed out" than traditional students

Non-traditional students more likely to have a higher overall satisfaction level with the university experience than traditional students

Non-traditional students more likely to have a lower grade point average than traditional students

RESULTS

Demographics

Tables 1 and 2 summarize the results of the hypotheses. The first hypotheses addressed students' marital status. Hypothesis 1 proved to be statistically significant. Of the 97 non-traditional students, 38.5% recorded their status as married or living with a partner. Only 8.7% of the traditional students noted that they were married or living with a partner. Thus the hypothesis was accepted.

The next two hypotheses have to do with students' status related to commuting and working full-time. The second hypothesis, associated with commuter status, was accepted. A simple cross-tab shows that 66.0% of non-traditional students commuted a greater distance than five miles while only 32.5% of traditional had an equal commute. Results are seen in Table 1. The Chi-square was significant. Thus, non-traditional students were more likely than traditional students to commute to school.

The number of hours worked per week for non-traditional students was compared to that of traditional students. A cross-tab showed that 52.6% of the non-traditional students worked more than 21 hours per week and 32.8% of the traditional students worked more than 21 hours. Support was found for hypothesis 3.

Attitudes/Involvement

Hypotheses dealing with students' expectations, involvement, time spent on campus and participating in social activities were also tested. Hypothesis 4 focused on students' interest in having a good time and making money while at college. Non-traditional students are less concerned about having a good time in college than traditional students. The mean importance level of having a good time at school was 5.1 for traditional and 4.1 for non-traditional students on a scale from 1 to 7. Thus, the hypothesis is accepted.

With regard to hypothesis 5, there was a difference between the non-traditional student and the traditional students in their expressed desire to graduate as soon as possible and prepare for career goals. On a 7-point scale, the mean expectation level was 5.5 for traditional and 5.8 for non-traditional students. That is, traditional students were more prone to consider college as a time to develop as a person and prepare for the future. Thus, the hypothesis was accepted.

Hypothesis 6 was concerned with non-traditional students being less involved in various college social activities than traditional students. To test this, we again used a test of the means. When asked to respond to the questions, "I participate regularly in social events," non-traditional students' average response was 3.1. The traditional student reported an average response of 4.1. This shows that non-traditional students are less interested in social events than traditional students. The test is significant with a t-score of 5.375 and p-value of .000. Thus, the hypothesis is accepted.

The next hypothesis described how students sense that they fit in and were a part of the college environment. The mean of hypothesis 7 was 5.6 for traditional and 4.9 for non-traditional students. This shows that non-traditional students feel that they fit in less than traditional students in the college social life. Thus, the hypothesis is accepted.

Stress and Coping

Non-traditional students were predicted to experience more stress related to the three main stress factors of work, family, and school. Of these three, students may have the least control over their work situation. With regard to hypothesis 8, the mean level, on a 7-point scale, of money related issues was 4.9 for traditional and 5.6 for non-traditional students. It was expressed that this stress stemmed from obligations associated in part with rent, tuition, and vehicle payments. A simple cross-tab shows that 58.3% of non-traditional students relied on their personal income alone while only 27.4% of traditional depended on their personal income. Results are seen in Table 2. The Chi-square was significant. Thus, the hypothesis was accepted.

The next three hypotheses dealt with the stress associated with work, commuting, and a general lack of time. The means of hypotheses 9 and 10 on a 7-point scale were 4.7 for non-traditional students and 4.2 for traditional students associated with work factors and 4.2 for non-traditional and 3.0 for traditional students relating to commuting issues reflecting that non-

traditional students feel more stress associated with co-workers, bosses, and scheduling along with commuting to and from work, school, and home. Representing the feelings of a general lack of time, hypothesis 11 garnered a mean of 5.3 for non-traditional students and 4.8 for traditional students. The hypotheses were accepted.

Hypotheses 12 and 13 measured students stress management methods. Non-traditional students reported a mean of 4.1 on the use of active stress management while traditional students reported a mean of 3.3. Active stress management methods include putting things in a broader perspective, organizing, and prioritizing. Traditional students were more apt to use passive stress management methods associated with skipping group meetings, homework, and classes. The non-traditional mean for passive stress management was 4.9 and the traditional mean was 5.3. The hypotheses were accepted.

Outcomes

The outcome hypotheses 14, 15, and 16 tested for differences in overall stress, satisfaction, and academic success measured by GPA between non-traditional students and traditional students. Stress and coping methods were statistically different between non-traditional students and traditional students; however, the when asked about considering themselves to be "stressed out", the mean for non-traditional and traditional students were similar at 4.5 and 4.4 respectively. It is felt that this similarity is representative of the stresses associated with different lifestyles. It is recognized that non-traditional students are stressed by work, school, and families. Traditional students, because they are less mature, experience stress from academic and social concerns (Newbold, Mehta, & Forbus, 2010). Hypothesis 14 was not supported.

Hypothesis 15 measured students overall satisfaction level with the university experience. It was expected that non-traditional students would be less satisfied with there experience because of the lack of support for many of their needs. However, a difference was not evident from this study. The mean for non-traditional students was 5.9 and the mean for traditional students was 5.7 on a 7-point scale. This hypothesis was not supported.

Academic success was measured by GPA (grade point average) with hypothesis 16. A simple cross-tab shows that 28.3% of non-traditional students earned a GPA higher than 3.5 while only 14.7% of traditional had an equal grade point. The Chi-square was significant. Thus, hypothesis 16 was not supported.

Table 1: Traditional vs. Non-Traditional Students Crosstab							
Related Hypotheses	Item	Non-Trad Students	Trad Students	Chi-Square	p-Value	Accept	Reject
H_1	Married/Living with significant other	38.5%	8.7%	99.727	.000	√	
H_2	Commuting greater than 5 miles	66.0%	32.5%	36.046	.000	√	
H_3	Working more than 21 hours per week	52.6%	32.8%	19.930	.000	√	
H_{16}	GPA between 3.51 – 4.00	28.3%	14.7%	15.479	.001		√

Table 2: Traditional vs. Non-Traditional Students Mean						
Related Hypotheses	Item	Non-Trad Students	Trad Students	p-value	Accept	Reject
H_4	Having a good time in college	4.1	5.1	.000	√	
H_5	Interested in graduating as soon as possible	5.8	5.5	.074	√	
H_6	Involved in on- and off-campus activities	3.1	4.1	.000	√	
H_7	Feel a part of the college environment	4.9	5.6	.000	√	
H_8	Stress related to money issues	5.6	4.9	.001	√	
H_9	Stress related to work issues	4.7	4.2	.068	√	
H_{10}	Stress related to commuting issues	4.2	3.0	.000	√	
H_{11}	Stress related to a general lack of time	5.3	4.8	.018	√	
H_{12}	Utilize active stress management methods	4.1	3.3	.002	√	
H_{13}	Utilize passive stress management methods	4.9	5.3	.006	√	
H_{14}	Generally more “stressed out”	4.5	4.4	.450		√
H_{15}	Overall satisfaction level with the university experience	5.9	5.7	.231		√
Means are based on a scale from 1 to 7.						

DISCUSSION

Relative to demographic factors, Table 1 shows that non-traditional students are more apt to be married or living with a significant other and are more apt to be commuter students. They are also working more hours than traditional students. Non-traditional students are expected to be involved in career work supporting their families and lifestyles while traditional students are more apt to engage in less permanent, part-time jobs to support their free time activities. Interestingly, while non-traditional students were working more hours and dealing with more stress than traditional students, they also had higher academic success levels as measured by GPA. Their maturity and life experiences as described by Newbold, Mehta, & Forbus (2009) explain why they are better time and stress managers allowing them the greater level of success.

When one considers attitudes and involvement, non-traditional students have different expectations for their college experience as it relates to having a good time, as well as utilizing college for personal development and preparation for careers. This is not surprising, given that non-traditional students are more likely to come to college with an existing career and with their lives already "developed". Non-traditional students are less likely to participate in social activities.

Non-traditional students are presented with stressful situations more often during their higher education endeavors because of their work, social, and domestic situations along with additional time constraints and less involvement in the campus life. They would seem to be squeezed for time because of the responsibilities associated with work and family. Financial stress is expected to be a greater concern as non-traditional students balance tuition, rent, vehicle, and other burdens on their resources. Non-traditional students are predicted to experience more stress related to co-workers, bosses, scheduling, and commuting issues to and from work, school, and home.

There is a difference between the coping styles of traditional and nontraditional students. Using active coping methods, non-traditional college students more often supported learning goals and utilized task-oriented coping through time management and study methods, than did the younger traditional college students who relied more on passive coping methods associated with cutting class, leaving homework undone, and drinking more (Morris, Brooks, & May, 2003).

Students who reported more effective problem solving skills were more likely to use coping strategies aimed towards task-oriented or problem solving focused. Learning goal orientations were associated with increased use of task-oriented coping that may imply, for example, that a student, who chooses to cope with stress more actively, setting up plans and mapping out solutions (Morris, Brooks, & May, 2003).

It has been suggested that, even though non-traditional students are more apt to work full time, these students are not as affected by working, commuting, or time limitations because they have more experience at time management (Newbold, Mehta, & Forbus, 2010). Non-traditional

students are more mature and motivated toward their career goals. They are more serious toward their studies. These characteristics explain many of their attitudes and involvement behaviors given that they bring a more serious focus to their university experience.

Finally, with regard to key outcome measures, there is a difference in overall grade point average, stress and student coping, and satisfaction with the university experience between non-traditional students and traditional students. Because of their experience and maturity, non-traditional students are better at time management. Time spent studying explains a variation in academic success (Nonis & Hudson, 2006).

Preceding research might lead one to believe that a non-traditional student would experience more stress and, therefore, display less satisfaction with the university experience. This study, however, proved that this is not true. There is no significant difference between a non-traditional student's overall satisfaction with the institution than that of a traditional student. There are several factors that could have led to these results.

While it was expected that non-traditional students are working more hours than traditional students, our study found this to be the case. Research shows that working does not have a negative effect on learning (grade point average), but also shows that working hinders involvement, which has a positive effect on learning (Lundberg, 2004) and is the greatest source of stress for the non-traditional student. One thought to attempt to explain these findings is that non-traditional students are perhaps more self-sufficient than traditional students. They are dealing with different factors than the traditional student, namely experiencing multiple life roles, practicing time management behaviors, and using more adaptive methods for handling stress. Adaptive coping behaviors lead to constructive, healthy outcomes in stressful situations. Non-traditional students tend to employ task-oriented coping and report higher grade point averages (Morris, Brooks, & May, 2003). These factors would lead to the conclusion that non-traditional students are quite capable of adjusting to factors in their environment. Their coping methods lead to fewer missed classes, more reading and more often completing homework assignments (Robotham, 2009).

From the study, it is known that traditional students are working, just not as much. Non-traditional students are more likely to work full-time and attend class part-time (Berker, et al, 2003). The lifestyles of non-traditional and traditional students are dissimilar from this viewpoint and, thus, do not share the same experiences in their college career (Newbold, Mehta, & Forbus, 2009a).

Students who look positively on the openness of administration tend to be more satisfied with the campus environment. (Nicolson & Bess, 1997). Non-traditional students have stronger relationships with administrators and place a greater value on faculty interaction than their traditional equivalent (Newbold, Mehta, & Forbus, 2010). Students reported that interacting with faculty and staff was helpful in reducing stress.

Limitations and Future Research

The research conducted concerning traditional and non-traditional students' attitudes about having a good time during their college careers was addressed by a single item construct. This is a limitation which could be addressed in future research. Additional constructs should be included to allow more data to be collected leading to stronger conclusions.

Future research is needed to better understand the balance of work lives and school for both non-traditional and traditional students. It is difficult for universities to implement campus activities and programs when they don't fully understand the lives of either group. Students, in theory, are sharing much of the same burden of work and school commitments and have less time for school functions. Perhaps research should be done on why non-traditional students and traditional students share the similar stress factors, and have divergent coping methods.

Research has shown that some universities are developing a framework and assessment tool to evaluate their effectiveness in serving non-traditional students (Compton et al, 2006). In fact, some universities are specifically targeting and catering to the needs of a sub-set (i.e., senior citizens) of the non-traditional students (Brandon, 2006). Along with this, it is pertinent for universities to reexamine the programs and methods for informing students of the programs that could be helpful in managing time and stress more proactively. Even if there is no statistical difference in satisfaction between the groups, perhaps satisfaction as a whole could be increased once the university knows what is desired by each group.

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INTEGRATING INTERNATIONAL FINANCIAL REPORTING STANDARDS INTO THE ACCOUNTING CURRICULUM: STRATEGIES, BENEFITS AND CHALLENGES

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ABSTRACT

During the past decade, efforts to globalize financial accounting standards have accelerated not only globally, but also in the U.S. In fact, within the next five years, the U.S. Securities and Exchange Commission (SEC) will likely require that public companies in the U.S. switch from U.S. Generally Accepted Accounting Principles (GAAP) to International Financial Reporting Standards (IFRS). Mitigating this tremendous change is the FASB/IASB convergence project, which brings significant changes to financial reporting even if, contrary to expectations, the SEC decides not to mandate the use of IFRS.

Business as well as accounting professionals must begin preparing for this impending change in accounting standards. Accounting educators should take action immediately and prepare their students for this tremendous change, which will affect not only accounting, but also core financial aspects of all public companies.

This study is based on the successful integration of IFRS into the accounting curriculum at a major public university and discusses how to motivate students to learn about IFRS; presents background material for educators; outlines and discusses the type, content, and level of IFRS material that realistically can be integrated alongside U.S. GAAP starting with the first accounting course; and discusses challenges and opportunities that arise for students and educators. A list of valuable resources for educators and students to help keep abreast of current developments is also included.

INTRODUCTION

Financial reporting in the U.S. is changing drastically. Within the next five years, U.S. public companies likely will have to switch from U.S. Generally Accepted Accounting Principles (GAAP) to International Financial Reporting Standards (IFRS). When this event occurs, the U.S. will join the more than 120 nations worldwide that currently require or permit the use of IFRS for financial reporting. The U.S. Securities and Exchange Commission (SEC), which has the legal authority to promulgate accounting standards for financial reporting in the U.S., and the

Financial Accounting Standards Board (FASB), to whom the SEC delegated most of the standard setting process, support these efforts.

The ultimate authority to mandate or permit the use of IFRS in the U.S. rests with the SEC, which recently has taken very significant steps to support global standards. In fact, in 2007, the SEC issued a new rule that, for the first time, permitted non-U.S. companies that raise funds on U.S. capital markets to choose between IFRS and U.S. GAAP when filing financial reports with the SEC. In 2008, the SEC issued a "Roadmap" (SEC, 2008) that proposed a phased-in adoption of IFRS by U.S. public companies starting in 2014. After analyzing feedback received from financial statement users, preparers, academia, accounting organizations, and other stakeholders, in February of 2010, the SEC issued an update, reaffirming its commitment to the potential adoption of IFRS and including a detailed work plan to facilitate and further this goal.

Accounting students, the future accounting professionals, must be aware of what is on the horizon and must begin to learn detail about IFRS. Business students must understand the information presented in companies' financial statements, be aware of expected changes in U.S. financial accounting and reporting rules, and understand the implications of such changes for business entities and financial statement users.

Large public accounting firms are well aware of the importance of IFRS. The "Big Four" firms have spent millions of dollars educating their professionals, providing informational resources to organizations and other stakeholders, and through their foundations, providing educational funding. Graduates of accounting and other business programs who are knowledgeable about IFRS will enjoy a competitive advantage over those who do not possess such knowledge. For example, in 2009, PricewaterhouseCoopers, one of the largest global accounting firms, stated that "some knowledge of IFRS and its impact will help students in the future..." (PwC, 2009) and indicated that they would "consider an applicant's awareness level of knowledge starting in fall 2009" (PwC, 2009).

Educators play a crucial role in helping students learn about IFRS and its effect on financial statement preparers and users. This study presents information for accounting and business educators regarding IFRS and provides teaching material that educators can use to begin integrating IFRS into their class discussions.

The remainder of this paper is organized as follows: The first section discusses the reasons why IFRS should be integrated into courses and can be used to motivate students to learn about IFRS. The next section presents background information for educators regarding IFRS. The following section provides teaching material that can be used to begin introducing IFRS into classes. It provides sufficient detail for integration into an introductory (Principles) course and also can serve as an introduction, overview, and background for more advanced courses.

The following section outlines the topics and level of detail that could be discussed in more advanced accounting courses, such as Intermediate Accounting, alongside U.S. GAAP and provides a list for additional useful resources readily available to educators and students. The last section discusses strategies based on the actual integration of IFRS across the financial

accounting curriculum at a major U.S. public university and includes recommendations for the successful integration of IFRS into accounting courses.

MOTIVATING STUDENTS – WHY IS KNOWLEDGE OF IFRS IMPORTANT?

Successful integration into the accounting program depends on students' motivation to learn about IFRS. Educators can help motivate students to want to learn about IFRS by impressing upon them the benefits of such knowledge.

Educators teaching accounting courses and, particularly Intermediate Accounting, typically struggle with time constrains. The ever-expanding volume of accounting standards and recent changes such as the FASB Accounting Standards Codification (FASB, 2009) make it challenging to integrate yet another substantive topic into an already time-constrained accounting curriculum. So, why is it necessary to integrate IFRS into our accounting course (and perhaps some non-accounting business courses) even prior to the final SEC decision in 2011 and how can educators motivate students to learn about IFRS in addition to U.S. GAAP? The most important reasons why IFRS should be integrated into courses even prior to the SEC's decision are: (1) the FASB/IASB convergence project, (2) the planned integration of IFRS into the CPA exam in 2011, (3) the global prevalence of IFRS, and (4) the positive effect of knowledge of IFRS on students' career opportunities.

The FASB/IASB Convergence Project

Since signing their "Memorandum of Understanding" in 2002, the FASB and IASB have been working together very closely toward the goal of developing global standards (FASB, 2002). The boards' convergence project has affected and continues to affect U.S. GAAP, as well as IFRS.

In fact, a recent article in *Financial Executive,* emphasizes that the FASB/IASB joint projects have "significant business and operational implications and will require considerable lead time" (Gallagher, 2010, 19). The article further identifies five projects that will affect "...virtually every industry and company" (Gallagher, 2010, 19).

The primary purpose of the convergence project is to bring U.S. GAAP and IFRS closer to together, to eliminate differences, and to ultimately develop global accounting standards (FASB, 2002). By the end of the year 2011, the two boards plan to issue ten new joint standards addressing core financial accounting topics that will very significantly change both U.S. GAAP and IFRS. In addition, the two boards are jointly revising their conceptual frame works.

For instance, FASB and IASB recently issued exposure drafts that will change revenue recognition and accounting for leases (FASB, IASB, 2010). The revenue recognition exposure draft introduces a performance obligation model that shifts focus of recognition away from the income statement to the balance sheet; the lease exposure draft proposes a "right to use"

approach that would virtually eliminate leases from being recognized as operating leases. The financial instruments exposure draft further entrenches fair value into U.S. GAAP and IFRS. The boards anticipate issuing final standards on these projects by June 30, 2011. Furthermore, the financial statement presentation convergence project (FASB, IASB, 2010) will revolutionize financial statements, creating a cohesive format, eliminating a separate income statement, and disaggregating items thereby increasing the number of line items in the financial statements by perhaps as much as 40%.

IFRS and the CPA Exam

Most accounting majors will sit for the CPA exam. The American Institute of Certified Public Accountants (AICPA) announced that starting in January 1, 2011, IFRS is eligible for testing on the CPA exam (AICPA, 2010). The extent to which IFRS questions will be asked and the nature of the questions has not been disclosed. Knowledge of IFRS will thus help students perform well on the CPA exam.

The Global Prevalence of IFRS

More than 120 nations currently require or permit the use of IFRS for financial reporting. For example, since January 2005, all European companies listed on European capital markets must utilize IFRS for financial reporting. Canada and Japan are adopting IFRS in 2011. U.S.-based multinational companies very likely already have affiliates, subsidiaries, or investments in companies that currently utilize IFRS. Knowledge of IFRS is needed by those who are involved in the financial or operational aspects of these companies.

Career Opportunities Arise from Knowledge of Global Accounting Standards

The global prevalence of IFRS and the relative lack of IFRS knowledge in the U.S. will create career opportunities both the in U.S. and abroad for those graduates who are knowledgeable about IFRS. In the U.S., multinational companies, accounting firms who provide services to multinational entities, and organizations that deal with global companies are currently seeking professionals that are knowledgeable about IFRS. This trend will accelerate sharply during the next few years, particularly if the SEC decides that all U.S. public companies must adopt IFRS.

Prospective employers are very well aware of this fact. For example, PwC, one of the largest global public accounting firms, already considers awareness and knowledge of IFRS an important aspect during their interviewing process in the U.S. Specifically, PwC expects that sophomores who have completed at least one accounting course and are interviewing for an internship should possess a “pre-awareness of IFRS” and its potential importance to their

careers; PwC expects that juniors applying for internships or full-time accounting positions exhibit knowledge of IFRS background, including regulatory issues, global use, as well as knowledge of some key differences between IFRS and U.S. GAAP (PwC, 2009).

Furthermore, the U.S. Bureau of Labor Statistics (BLS) estimates that between 2008 and 2018, employment opportunities for accountants and auditors will increase by 22% (BLS, 2010). In their report, the BLS attributes this positive employment outlook in part to the movement toward IFRS and states that this "should increase demand for accountants and auditors because of their specialized expertise" (BLS, 2010, 4).

Opportunities will also arise abroad for accounting and business graduates. U.S. GAAP is country specific; students who wish to work for or with global companies will need to learn IFRS. Educators who proactively integrate IFRS into their classes will help students acquire internationally applicable knowledge and gain significant competitive advantages in the career market.

Benefits for Non-Accounting Business Majors

Even non-accounting business majors will benefit from fundamental knowledge about IFRS. Business majors are the future business professionals. Accounting is often referred to as the language of business and business majors must be able to disseminate the information provided in the financial statements and reports to be able to interpret results.

Advantages for Business Schools, Accounting Programs, and Faculty

Opportunities arise from the successful integration of IFRS into the curriculum not only for students but also for business schools, accounting programs, and faculty. Universities are just starting to integrate IFRS into their curriculum. A survey conducted by the American Accounting Association and KPMG in 2008 showed that 62% of the faculty responding to the survey indicated that they had not yet taken any significant steps to integrate IFRS into their classes (KPMG, 2008).

Business schools and especially accounting programs will benefit by proactively integrating IFRS. A proactive approach will enhance the schools' prestige and reputation – both with students and graduates' employers.

Furthermore, faculty with knowledge of IFRS and experience with integrating IFRS into the curriculum will be in high demand and thus enhance their marketability. Prior to starting to introduce IFRS into the accounting curriculum, faculty must acquire the necessary knowledge, starting with some background knowledge about the quest for and trend toward global accounting standards.

IFRS BACKGROUND

The following discussion provides background for educators about IFRS. Brief or more detailed discussions of this background also can be used in any business-oriented course, but is especially useful for accounting courses from Principles of Accounting to more advanced courses.

Globalization and Convergence Efforts

During the past few decades, organizations such as the International Organization of Securities Commissions (IOSCO), of which the SEC is an active member, have advocated the development of global financial accounting standards (Doupnik & Perera, 2009). In the U.S., in 1988, the SEC started encouraging the development of global accounting standards (AICPA, 2008).

In 2002, the FASB and the IASB signed a "Memorandum of Understanding," commonly referred to as the "Norwalk Agreement," in which the two standard setters agreed to work together toward the common goal of jointly developing a set of high quality accounting standards that can be used for cross-border financial reporting (FASB, 2002).

As a result of the Norwalk Agreement, the FASB and the IASB have worked together on many projects. The objective of this FASB/IASB cooperation is to bring U.S. GAAP and IFRS closer together. As a result of this cooperation, many new, or revised standards issued by the FASB and the IASB have eliminated many existing differences between U.S. GAAP and IFRS. In fact, a recent study (Henry et al., 2009) found that between 2004 and 2006, the differences between income and stockholders' equity derived under IFRS and under U.S. GAAP decreased significantly. While the FASB and IASB's joint efforts referred to as the "Convergence Project," have made the goal of developing global standards possible, the SEC's actions have lent authoritative power to their efforts.

SEC Actions

Until recently, non-U.S. companies that raise capital in the U.S., and thus are required to file financial reports with the SEC, had to either prepare U.S. GAAP-based financial statements or file form 20-F, reconciling their financial statement numbers with U.S. GAAP. This was a very costly process. However, in 2007, the SEC issued a rule that virtually eliminated the required reconciliation by allowing non-U.S. companies to file either U.S. GAAP or IFRS-based financial statements with the SEC (SEC, 2007). This new rule represents an important step toward a likely switch from U.S. GAAP to IFRS for financial reporting by U.S. public companies.

In November 2008, the SEC issued a proposal entitled "Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards by U.S. Issuers" (SEC, 2008). In its 175-page proposal, the SEC details mile stones towards the adoption of IFRS in the U.S. and suggests a phased-in adoption of IFRS by U.S. public companies between 2014 and 2016. In addition, limited early adoption by companies that are among the 20 largest in their industry and whose affiliates currently prepare IFRS-based financial statements was permitted (SEC, 2008).

In response to comments received on its Roadmap, on February 24, 2010, the SEC issued a policy statement in support of global accounting standards and a work plan that specifies important considerations to be addressed prior to the potential adoption of IFRS by U.S. companies (SEC, 2010). In its policy statement, the SEC also rescinded the early adoption choice proposed in its Roadmap and indicated a potential adoption date of 2015. In both the Roadmap and its 2010 policy statement/work plan, the SEC indicated that it would make a definite decision regarding adoption of IFRS during the second part of 2011.

The SEC specified the following six key considerations:

- "Sufficient development and application of IFRS for the domestic reporting system
- Independence of standard setting for the benefit of investors
- Investor understanding and education regarding IFRS
- "Examination of the U.S. regulatory environment that would be affected by a change in accounting standards
- Effect on issuers, both large and small, including changes to accounting systems, changes to contractual arrangements, corporate governance considerations, and litigation contingencies
- "Human Capital readiness" (SEC, 2010)

Educators play a critical role with respect to the achievement of the SEC's sixth's key consideration.

INTRODUCING IFRS TO STUDENTS

Successful integration of IFRS into the curriculum begins with an effective strategy to allow for sufficient exposure to IFRS without jeopardizing the continuing coverage of U.S. GAAP. In their 2008 survey of accounting faculty, KPMG and the American Accounting Association found that the most cited key challenges associated with integrating IFRS into the accounting curriculum were: (1) the development of curriculum material (79%) and (2) finding time in the class schedule (72%).

Regrettably, in most text books, coverage of IFRS is not yet sufficiently detailed to provide the necessary material. Concise, yet clear material needs to be developed and utilized to achieve this goal. The information provided below can be utilized for class presentation.

While accounting majors need to acquire detailed knowledge of IFRS, all business students, who typically complete one or two financial accounting-oriented courses as part of their business core, also need to know about IFRS and understand the implications of IFRS for business organizations and financial statement users. Prior to learning details about specific IFRSs, accounting majors must be familiar with background information, which provides a foundation for more detailed discussions in their Intermediate Accounting courses.

Specifically, in the first financial accounting course, business and accounting majors should learn about: (1) current significant developments in financial reporting with respect to IFRS and the FASB/IASB convergence project, (2) the SEC's regulatory actions regarding IFRS, (3) the advantages and challenges of adopting IFRS, (4) some major current differences between IFRS and U.S. GAAP, and (5) the likely overall effect of IFRS on companies' financial statements. Each of these objectives is addressed in more detail in the "Teaching Materials" section.

The fundamental knowledge about IFRS that students should acquire in their first accounting course can also be taught in intermediate and other advanced accounting courses in the form of an introduction and background discussion. This is especially useful if students have not yet been introduced to IFRS in their lower division courses. The teaching material below can be used in class discussions; additional detail is shown in the "IFRS Background" section.

Teaching Materials

Current developments in financial reporting – IFRS

- Many countries have moved away from country-specific accounting standards. Instead, IFRS are emerging as global accounting standards.
- IFRS are issued by the International Accounting Standards Board (IASB) (website: www.ifrs.org)
    - Headquartered in London, England; 15 member board, expanding to 16 in 2012
- Currently, 120 nations permit or require the use of IFRS for financial reporting
    - All European public companies listed on European exchanges must use IFRS
    - Canada and Japan are adopting IFRS in 2011
- The U.S. is considering to adopt IFRS
- The FASB and the IASB are working together – Memorandum of Understanding (Norwalk Agreement) signed in 200
    - The FASB/IASB Convergence Project

  - The FASB/IASB convergence project eliminated many differences between U.S. GAAP and IFRS
  - The boards are still working on a number of joint projects

Recent regulatory actions

- In 2007, the SEC issued a rule to allow non-U.S. SEC registrants to use IFRS when reporting to the SEC
- In 2008, the SEC issued its "Roadmap for the Potential Use of Financial Statements Prepared in Accordance With International Financial Reporting Standards By U.S. Issuers" (SEC, 2008)
- In February 2010, SEC issued an update "Commission Statement in Support of Convergence and Global Accounting Standards" and accompanied "Work plan" (SEC, 2010)

Potential benefits of IFRS adoption

- Enhanced access to global financial markets
- Easier to raise capital
- Potentially lower cost of capital (in the long-run)
- Lower financial reporting costs for companies with subsidiaries that prepare IFRS-based financial statements
- Globally transferable knowledge for accounting professionals
- Enhanced career opportunities for professionals knowledgeable about IFRS

Potential challenges of IFRS adoption

- High initial cost of adopting IFRS
- Need to convert accounting information systems
- Cost of preparing financial accounting information under two sets of accounting standards during the first few years (needed for comparative purposes)
- Staff training
- Investor education

Significant current differences between U.S. GAAP and IFRS

- IFRS is more principles-based, while U.S. GAAP is more rules-based
  - This translates into (generally) broader rules that may require more professional judgment
- The LIFO inventory method is prohibited under IFRS

- Property, plant and equipment can be revalued to market value
  - Affects assets and accumulated other comprehensive income and equity
- Qualifying intangible assets may be valued at market value
- Extraordinary item is not a valid category under IFRS
- Development costs may be capitalized under IFRS, but not under U.S. GAAP
  - Research costs are still expensed as incurred

Expected overall effect of IFRS on financial statements of U.S. companies

- Tends to increase assets, equity, and income (if companies switch away from LIFO)
- Tends to increase assets and stockholders' equity (if property, plant, and equipment are written up to market value)

INTEGRATING IFRS INTO INTERMEDIATE ACCOUNTING

Intermediate accounting students need to know some specific details about IFRS while still focusing mainly on U.S. GAAP. After an initial introduction of IFRS in the first accounting course or at the beginning of Intermediate Accounting, educators can integrate IFRS into their Intermediate Accounting courses utilizing the following strategy.

As educators discuss specific topics in class each week consistent with U.S. GAAP, significant expected changes and some significant continuing differences between U.S. GAAP and IFRS can be introduced. This strategy tends to be the most efficient and effective method for using the scarce class time available in Intermediate Accounting. When prioritizing what IFRS topics to address, instructors may want to focus on (1) the FASB/IASB convergence projects and (2) significant current differences between IFRS and U.S. GAAP that are not slated to be superseded in the near future.

The FASB/IASB Converge Projects

The first priority should be the discussion of the convergence projects. This strategy would likely be most efficient and effective because students will need to learn about changes brought about as a result of these joint FASB/IASB projects. Discussion of final standards, exposure draft, and discussion memorandums relating to those projects should take priority because these projects will become or affect GAAP in the U.S., regardless of the SEC's decision about a switch to IFRS.

The following projects currently are most advanced toward final standards and likely will have the greatest impact on U.S. and non-U.S. companies' financial accounting and reporting during the next few years.

1. Fair value measurement
2. Revenue recognition
3. Accounting for leases
4. Accounting for financial instruments and hedging
5. Balance sheet offsetting
6. Consolidation policy and procedures

The FASB and IASB as planning to issue a final standard on fair value measurement during the first quarter of 2011, and final standards on the other projects during the second quarter of 2011.

In addition, the boards identified three other projects for completion by December 31, 2011. These are:

1. Financial statement presentations
2. Reporting discontinued operations
3. Financial instruments with characteristics of equity

In addition, several other projects, such as a new standard on "earnings per share" still are on the boards' agenda for completion at a later date.

Continuing Significant Differences between U.S. GAAP and IFRS

The second priority should be given to significant continuing differences that exist between U.S. GAAP and IFRS. Some of these are minor, some a very significant. Given the typical time constraints in Intermediate Accounting courses and the continuing necessary emphasis on U.S. GAAP, focusing on significant substantive differences would be most useful and manageable given the time constraints. Here are some highlights:

- LIFO inventory method is prohibited under IFRS
    - Switching from LIFO to FIFO or weighted average likely would increase income for the current year and inventory and retained earnings on the balances sheet because of the cumulative effect of prior year LIFO-FIFO/weighted-average differences
- The lower-of-cost or market rule – lower-of-cost-or net realizable value rule
    - Essentially the same principle
    - However, under IFRS, market is always defined as replacement cost
    - Results in different "market" (except when ceiling is market under U.S. GAAP
- Property, plant and equipment can be revalued to market value
    - Affects long-term assets and accumulated other comprehensive income

  - Initial revaluations are recognized in a revaluation account under other comprehensive income, increasing accumulated other comprehensive income and equity
  - Subsequent impairments reduce equity, excess impairments are recognized as losses in profit or loss statement (income statement); subsequent recoveries may be recognized as gains if they relate to amounts previously recognized in income statement.
  - Revaluations tend to affect subsequent depreciation expense
- Qualifying intangible assets may be valued at market value
  - Rules for recognition are very similar to those for tangible long-lived assets
- Extraordinary items is not a valid category under IFRS
  - These item would be categorized as "other revenue, expense, gain or loss"
- Development costs may be capitalized under IFRS, but not under U.S. GAAP
  - Research costs are still expensed
  - Increases intangible assets, increases equity because of the revaluation allowance, increases income because of lower expense
  - Increases subsequent year's amortization expense
- Impairments generally can be reversed in subsequent years
  - This is currently prohibited under U.S. GAAP
  - Exception under IFRS is goodwill impairment, which is irreversible
- Convertible bonds: Issue price is allocated between debt and equity

IFRS RESOURCES FOR EDUCATORS AND STUDENTS

Disseminating and analyzing current IFRSs and discussion memorandums and exposure drafts issued by the IASB and FASB takes a significant amount of time. Fortunately, excellent sources of information that help educators understand the key provisions of new accountant standards are available. Many of these resources can also be used in class discussions. The following discussion focuses on some select resources and is not intended to be exhaustive.

The "Big Four" global public accounting firms have spent significant resources educating their professionals and have also developed valuable resources for educators and students. These include periodic webcasts, briefing notes, downloadable U.S. GAAP/IFRS comparisons, and much more. For example, PricewaterhouseCoopers and KPMG provide frequent and very timely webcasts on IFRS and the FASB/IASB convergence projects. The live discussions and the downloadable presentation slides are excellent. In addition, the webcasts are archived and can be conveniently replayed. Faculty, as well as students can register for these webcasts.

PricewaterhouseCoopers developed interactive financial statements that can be used in class to show students how financial statement items would be presented on IFRS-based financial statements. A simple click on a particular line item and the IFRS version of the presentation with some added explanations can be seen.

KPMG's faculty portal link includes access to more than 200 IFRS PowerPoint slides that are organized by topics. Deloitte's recently issued its 2010 edition of "IFRSs in your Pocket," which provides brief summaries of currently effective IFRSs.

Each "Big Four" accounting firm has dedicated a specific website/webpage to IFRS education: These are (in alphabetical order):

Deloitte: http://www.iasplus.com/dttpubs/pubs
Ernst & Young: http://www.ey.com/US/en/Issues/IFRS
KMG: http://www.kpmginstitutes.com/ifrs-institute
PricewaterhouseCoopers: http://www.pwc.com/us/en/faculty-resource/ifrs-ready

In addition, professional organizations, such as the AICPA have created websites on IFRS and also provide valuable resources. For example the AICPA created its "IFRS.com" website that provides up to date information on regulatory and standard setting developments, provides convenient links to original pronouncements, and publishes its own resources, such as "International Financial Reporting Standards – Backgrounder."

Finally, the IASB and FASB also have public webcasts that both students and educators can listen to. In addition, instructors and students can periodically access the SEC's website to keep abreast of regulatory developments, such as updates on its "Work Plan," which can be found in the "Proposed Rules" link on the SEC website.

RECOMMENDATIONS BASED ON AN ACTUAL INTEGRATION

The key to a successful integration of IFRS is to engage students' interest. This can be accomplished by focusing on benefits to students, such as career opportunities, and for accounting majors, emphasizing the expected integration of IFRS into the CPA exam. It is essential to include IFRS as a topic on syllabi so that students consider it a required part of the course. In addition, some questions on IFRS should be included on exams. Exam questions are available to members of the American Accounting Association on the organization's AAA Commons website, as well as from some other sources.

During the Spring Quarter of 2010, IFRS was integrated into the accounting curriculum at a major public university. All instructors utilized the same material that was development by one faculty member. Overall, the experience was positive and students were receptive to learning about IFRS. Comments received in anonymous end-of- quarter surveys generally were positive and most students felt that they were more knowledgeable about IFRS and that this knowledge would be very useful to them in their careers. The following strategies worked well for students and instructors.

Lower-Division Accounting Courses

During the first week of class, instructors build awareness of IFRS and briefly discuss the trend toward global accounting standards and the current regulatory and standard setting environment. During the second week, together with an overview of U.S. GAAP financial statements, instructors focus on the benefits and challenges of IFRS for companies, financial statement users, and professionals and indicate the overall likely effect of IFRS on entities' financial statements.

Throughout the quarter, while covering accounting topics consistent with U.S. GAAP, instructors refer to significant current differences between U.S. GAAP and IFRS, focusing on the topics outlined above in the "Teaching Materials" section. Coverage of IFRS in that manner requires about ten to 15 minutes each week.

Intermediate and Advanced Accounting Courses

During the first class meeting, or by the end of the first week of classes, instructors cover the issues/topics shown in the "Teaching Materials" section. This requires approximately 45 minutes. Over time, as students gain exposure in other courses (e.g., Principles) this coverage can be condensed and utilized as an update.

Throughout the quarter, as specific U.S. GAAP topics are discussed, instructors refer to significant continuing differences between U.S. GAAP and IFRS, discussing the topics in more detail than in the first accounting course and also explain the main provisions of convergence projects that are in the exposure draft or discussion memorandum stage. This requires approximately 25-30 minutes per week.

CONCLUSIONS

Given the strong possibility that U.S. public companies will have to switch from U.S. GAAP to IFRS and because of the changes arising from the FASB/IASB convergence project, educators should begin integrating IFRS into their accounting course. This study presents information and teaching materials that can be utilized to integrate IFRS into financial accounting courses.

The study discusses strategies for motivating students to learn about IFRS; presents IFRS background information for educators; outlines and discusses the type, content, and level of IFRS material that realistically can be integrated alongside U.S. GAAP starting with the first accounting course; and discusses challenges and opportunities that arise for students and educators. A list of valuable resources for educators and students to help them keep abreast of current developments is also included. The strategies and materials presented in this study have

been successfully utilized in an actual integration of IFRS into the financial accounting curriculum at a major public university.

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EXTENDING THE FORER TEST BEYOND FACE VALIDITY: AN EXPERIENTIAL APPROACH TO TEACHING SOCIAL SCIENCE METHODOLOGY

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ABSTRACT

Students studying social science methodology have difficulty understanding the concept of validity beyond the face validity. Several generations of psychology students have taken the 'Forer Test' and learned not to rely on face validity. In the 'Forer Test' every participant gets the same personality profile after taking a personality test. Under the impression that it is a personalized profile, most participants consider the 'results' to be fairly accurate. In this exercise, the Forer Test is used as a catalyst for examining additional validity concepts. We use social science analytical methods on the data collected from the 'personality test' to see if indeed they reveal patterns that indicate latent constructs. In this paper we describe the basic exercise, and illustrate how it was successfully used in undergraduate and graduate management and marketing courses.

INTRODUCTION

Many psychology students are familiar with the 'Forer Test'. In the test, a personality evaluation is administered and every participant gets the same personality profile as a result (Forer, 1949; Carroll, 2005). Most participants consider the profile to be fairly accurate, thinking it is a personalized profile based on the test. This face validity is due to the generally positive nature of the profile (Leung, Su & Morris, 2001), the accepted authority of the evaluator and the belief that the analysis was unique to them (Hannay, Arisholm, Engvik & Sjøberg, 2010; Dickson & Kelly, 1985). The test is used to show the problems with relying only on face validity to judge a measurement instrument or evaluation. In this exercise we go beyond the traditional 'Forer Test' lesson. We administer the 'personality test' online, and analyze the actual results from test using legitimate, established social science methods to see if indeed the test does reveal patterns that indicate latent constructs. In this way, an interesting but limited demonstration of a psychological phenomenon is used as a starting point for illustrating more sophisticated concepts. In addition to describing the basic exercise, we illustrate how it can be used in different but related behavioral disciplines within business education. Specifically we describe the basic exercise, and illustrate how it was successfully used in undergraduate and graduate management and marketing courses.

The paper begins with a description of the Forer test, its history and application. This is followed by a brief explanation of experiential exercises in general. A description of our exercise is presented next. After the basic exercise is presented, a specific implementation of the exercise will be examined in detail. The materials and procedures will be presented first, followed by the analysis methods and results. The presentation of the results in class and the ensuing discussion are explored next. The paper concludes with proposals of how to modify the exercise for different contexts.

BACKGROUND – THE FORER TEST

In 1949 Bertram R. Forer introduced "the fallacy of personal validation". Specifically he found that people had a tendency to accept vague, general descriptions of personality as very true for them even though the descriptions could apply to almost everyone. The personality evaluation given by Forer was as follows:

"You have a need for other people to like and admire you, and yet you tend to be critical of yourself. While you have some personality weaknesses you are generally able to compensate for them. You have considerable unused capacity that you have not turned to your advantage. Disciplined and self-controlled on the outside, you tend to be worrisome and insecure on the inside. At times you have serious doubts as to whether you have made the right decision or done the right thing. You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations. You also pride yourself as an independent thinker; and do not accept others' statements without satisfactory proof. But you have found it unwise to be too frank in revealing yourself to others. At times you are extroverted, affable, and sociable, while at other times you are introverted, wary, and reserved. Some of your aspirations tend to be rather unrealistic" (Forer, 1949).

Participants in Forer's test, performed in 1948, rated this passage as 4.26 on a scale of 0 to 5 with 4 indicating it was a 'good' assessment and 5 as 'excellent' (Forer, 1949; Hannay, Arisholm, Engvik & Sjøberg, 2010). The test has been repeated hundreds of times in the succeeding decades with the average remaining about 4.2 (Carroll, 2005).

This phenomenon of individuals tendency to accept 'bogus' feedback as accurate is also known as the 'Barnum Effect' (Meehl, 1956; MacDonald & Standing, 2002). The Barnum effect was initially used in classrooms to illustrate gullibility and deception; however it later was used to teach ethics (Beins, 1993). Those teaching ethics use the Barnum Effect to aid in discussions of the ethics of deception, the ethics of deception in research, the feelings of those who have been lied to (Beins, 1993). Recently Boyce & Geller (2002) found no studies that used the Barnum effect to 'promote a healthy skepticism of pseudoscience' or to teach research methods, therefore they used it to teach psychology research methods, ways of displaying and interpreting data, and to "highlight the pitfalls of pseudoscience" (Boyce & Geller, 2002).

Those who have conducted research into the phenomenon while using it class found that under certain circumstances people accept feedback rationally and not gullibly (Michels & Layne, 1980). For example, when presented with each, participants show the ability to discriminate between accurate, trivial and inaccurate feedback (Wyman & Vyse, 2008; Harris & Greene, 1984). Another interesting finding is that the Barnum effect is more prevalent in positive statements and evaluations than in negative leading researchers to conclude that the Barnum effect is somewhat cancelled by a self-serving bias (Leung, Su & Morris, 2001; MacDonald & Standing, 2002).

THE EXPANDED FORER TEST EXERCISE

In this exercise we follow the lead of others who see the potential use of the Forer Test for teaching research methods (Boyce & Geller, 2002). We go further than using the Forer test to illustrate and start conversations about gullibility, ethics of deception and test validity. Furthermore, we use the same exercise to show how proper investigations can be done. The exercise was run in several classes in undergraduate and graduate organizational behavior, marketing and management courses. The exercise can easily be adapted for other situations.

Table 1: Items on the 'Personality Test'

Anchor 1	Anchor 2
Red	Blue
Cats	Dogs
Cotton	Satin
Meat	Vegetables
Night	Day
City	Country
Travel	Staying Home
Activity	Relaxation
Sun	Clouds
News	Sports
Radio	TV
Science	Art
Rock	Classical
Solid	Stripes
Drama	Comedy

Exercise Materials and Procedure.

Students were asked to complete a survey administered online in a course management shell. The survey consisted of what appeared to be a simple personality test. The items are shown in Table 1. They were asked to indicate which they preferred (or indicate 'no preference) for each of 15 sets of items. After being asked two demographic questions (age, gender), students were next shown a 'personality evaluation', presumably based on the answers given. They were then asked how accurate the description was from '1-very poor' to '5-excellent'.

Later in the week, in class, the 'truth' was revealed and the Forer effect was discussed. The instructors had already done a correlation and factor analysis on the items, and used these results to illustrate basic concepts of validity and latent constructs.

Table 2: Correlation Results

Given these pairs:		This is positively related to these:	
Activity	Relaxation	Activity	Cotton, Travel, Sun, Comedy
Sun	Clouds	Sun	Rock, Activity, Day
Travel	Stay Home	Travel	Day, Dog, Activity
Rock	Classical	Rock	Meat, Sun
Comedy	Drama	Comedy	Activity, Sports
Science	Art	Science	Art
Dogs	Cats	Dogs	Travel
Meat	Vegetables	Meat	Rock
Cotton	Satin	Cotton	Activity
Sports	News	Sports	Comedy
Day	Night	Day	Sun

ANALYSIS OF RESULTS.

The data from all of the participating classes were combined and some simple analysis was conducted. The means and standard deviations of the variables were computed as well as statistics for kurtosis and skewness. Next significant correlations of the remaining items were identified. Table 2 shows the items that were correlated at .01 or better. An exploratory factor analysis was conducted to find interrelated patterns of relationships and identify latent constructs. Six groups were identified by the factor analysis (principle component, varimax

rotation), of which only two had more than two items. Those two factors (Table 3) had alpha reliabilities that were <.5, which is unacceptable.

Table 3: Factor Analysis Results	
Analysis reveals two groups:	
Group 1	
Sun	Clouds
Science	Art
Day	Night
Rock	Classical
Group 2	
News	Sports
Drama	Comedy
Vegetables	Meat

Class Discussion.

The procedure was explained to the classes. Students were asked to propose relationships between the items. The relationships were revealed and discussed with an emphasis on comparing proposed relationships with the actual relationships found. Next the two revealed patterns were presented. The discussion about the groupings centered on explanations of the groups and uses of this information. Next the marketing students were asked to identify ways that this information can be used to design products and marketing campaigns. The management students were asked how this information can be of value to managers. Both groups were asked to design a follow-up study related to their proposed uses of the information.

DISCUSSION AND CONCLUSIONS

The Forer test (Forer, 1949), or Barnum effect (Meehl, 1956) is often used to illustrate gullibility and ethics (Beins, 1993). Rarely is it used to explore research methods (Boyce & Geller, 2002). In this paper is description of how the Forer/Barnum phenomenon was presented in management and marketing course and used to introduce legitimate research methods.

Although the exercise was a success, we have identified several areas for improvement. First, the 'personality survey' can include a greater number of items and the items themselves can be more carefully chosen. The test given was designed to be nonsense; however that is not necessary at all and may have actually limited our analysis. The items themselves might be chosen to reflect specific concerns of disciplinary courses, such as consumer product or marketing related issues, or work related concepts to allow the final results to be applied to product design, marketing campaigns or staffing, job design, training and motivation. Traditional 'personality' items could be used if the exercise was to be used across classes in different disciplines and at different levels. A problem with the original items was a great degree of kurtosis and skewness. Scale items with greater variation would lead to a better analysis and still allow for discussion of skewness and kurtosis. Carefully chosen items would also allow for factor analysis to develop valid reliable factors. Factor analysis would be especially appropriate in a graduate level class. After the data is entered into a spreadsheet, the analysis can be done by students as an assignment, either with specific directions or leaving the students to find their own ways to use it. Discussions of validity at the graduate level are particularly important (Mundfrom, Young, Shaw, Thomas, & Moore, 2003) and better analysis results would facilitate such a discussion.

Once an instrument is developed future exercises can also be used for research purposes. It would be relatively easy to design experiments that extend the existing research. Graduate students and faculty could explore the dynamics of the Forer/Barnum effect on discipline specific tests (consumer related, job related, etc.) to see under what conditions people are rational or gullible (Michels & Layne, 1980), have the ability to discriminate between accurate, trivial and inaccurate feedback (Wyman & Vyse, 2008; Harris & Greene, 1984) and have the effect mediated by a self-serving bias (Leung, Su & Morris, 1980; MacDonald & Standing, 2002).

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